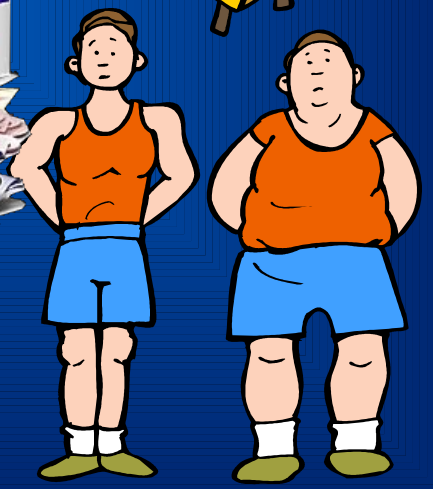
The Obesity Epidemic: Considerations Regarding Children and Youth



Barry A. Franklin, Ph.D.

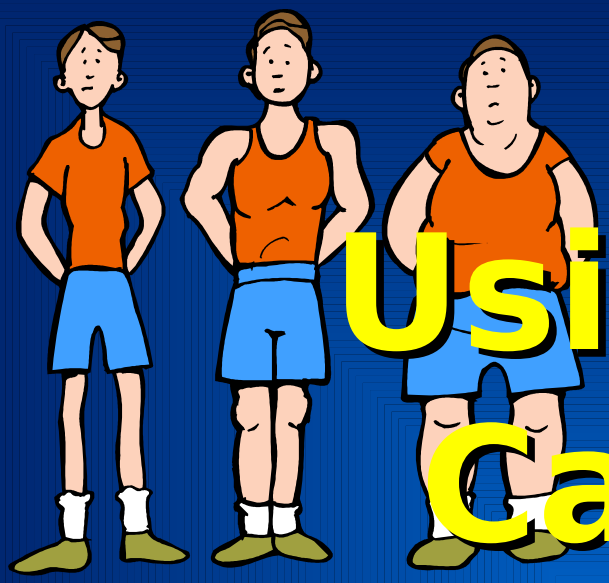
William Beaumont Hospital

Royal Oak, Michigan, U.S.A.

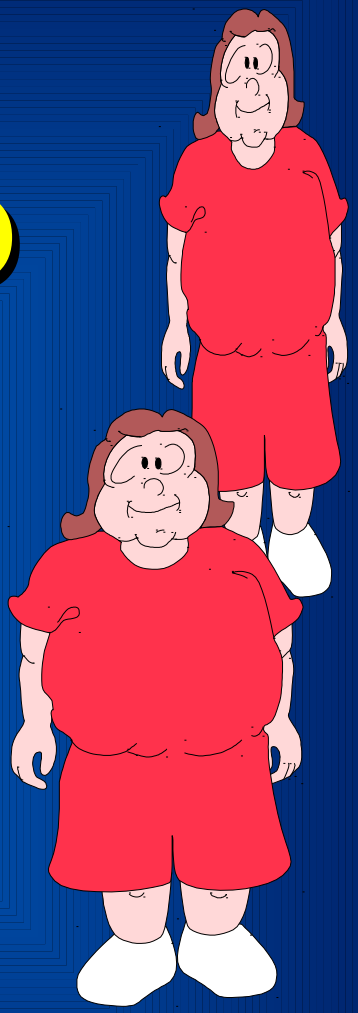
e-mail: bfranklin@beaumont.edu

REWARD!
LOST
PUPPY

But obesity is really no laughing matter . . .

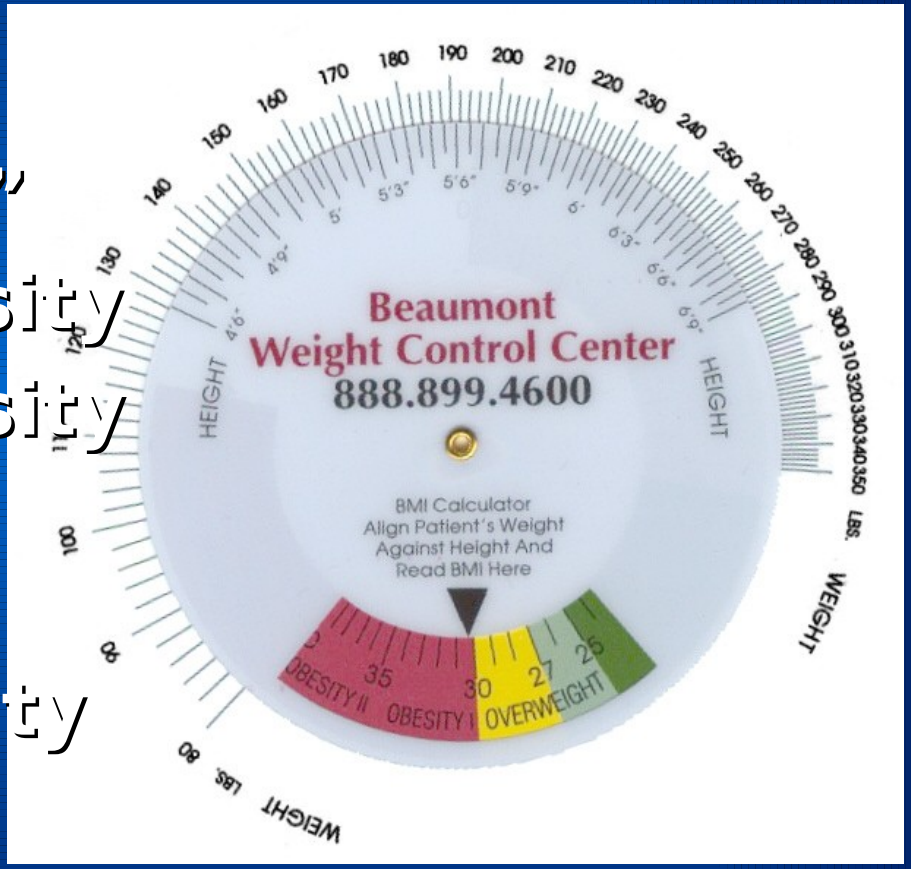


Using BMI to Categorize Normal Weight, Overweight, and Obesity



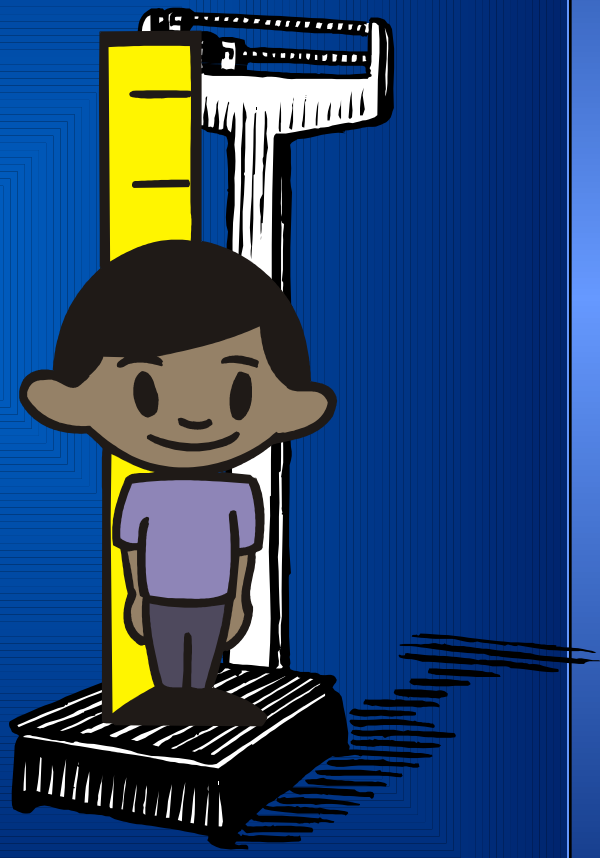
Body Mass Index (BMI) kg/m²

- < 25 is “normal”
- 25-30 “Overweight”
- 30-35 Grade I Obesity
- 35-40 Grade II Obesity
- 40-45 Grade III Obesity
- 45-50 Morbid Obesity
- > 50 “Superobese”



How is BMI Measured in Children and Teens?

Because boys and girls grow at different rates, BMI for children is age-and gender-specific, and must be calculated for each child on an individual basis.

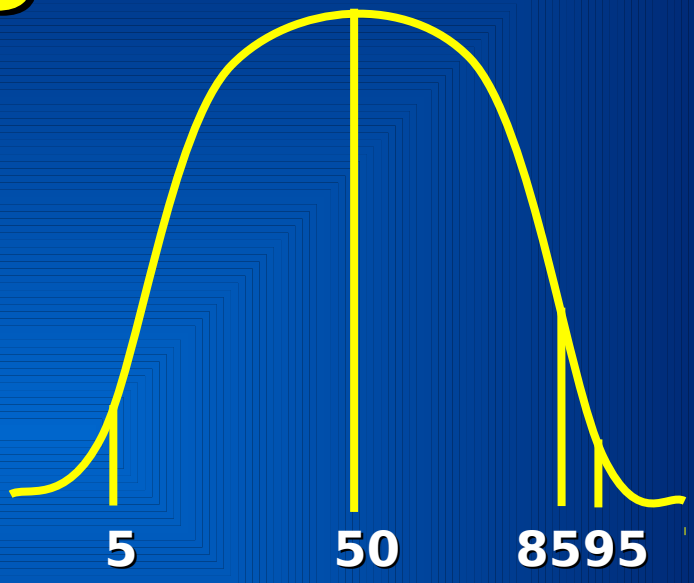


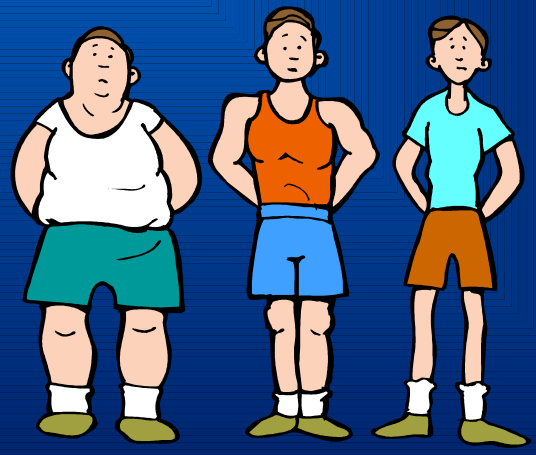
Clinical growth charts are used to calculate BMI in children and adolescents.

See:

Children and Teens Whose BMI-For-Age is:

≥ 95th percentile	Obese
85th - < 95th percentile	at risk for overweight
5th - < 85th percentile	normal weight
< 5th percentile	underweight





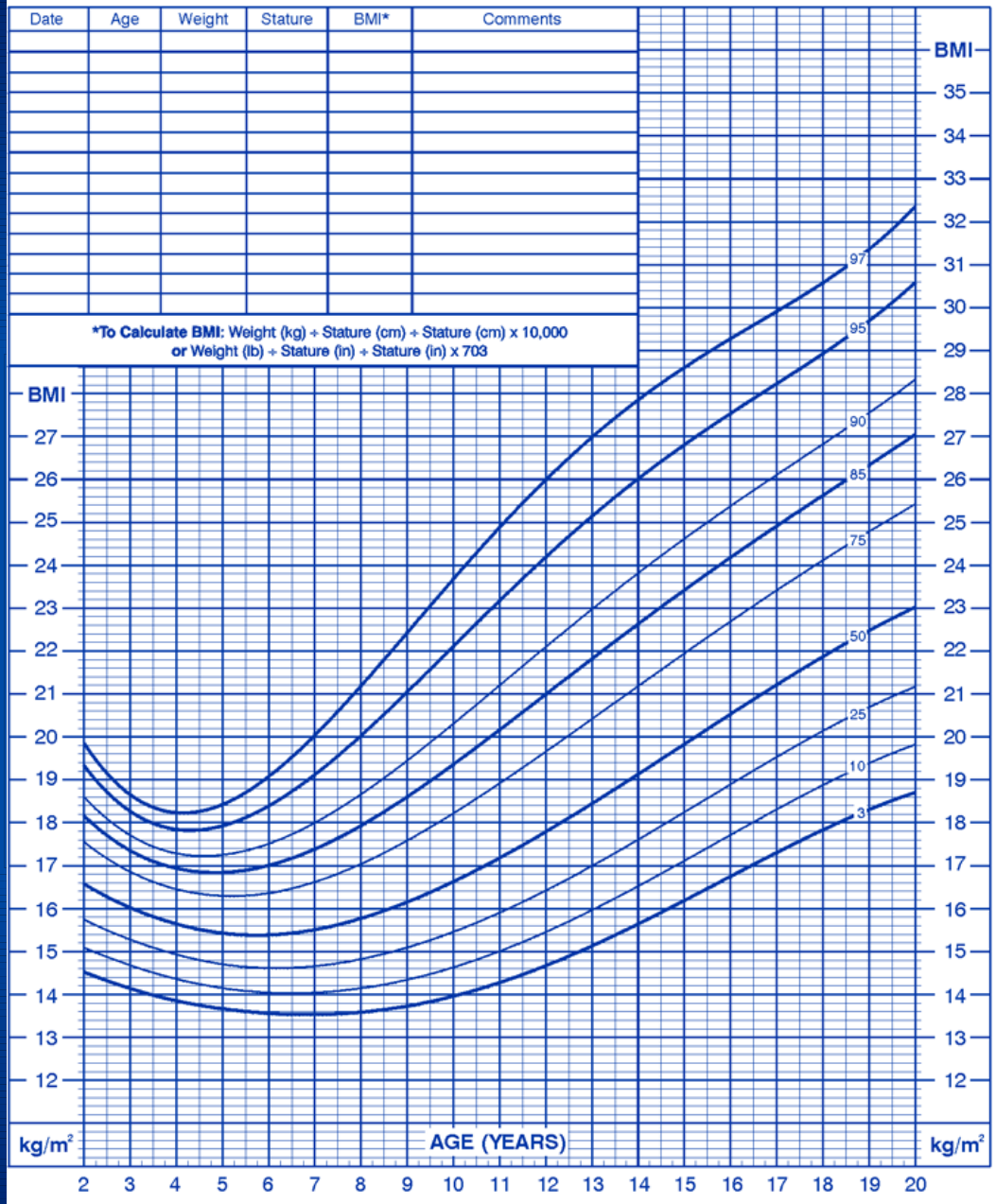
2 to 20 years: Boys
Body mass index-for-age percentiles

NAME _____

RECORD # _____

Date	Age	Weight	Stature	BMI*	Comments

***To Calculate BMI:** Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703



Published May 30, 2000 (modified 10/16/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

CDC
SAFER · HEALTHIER · PEOPLE™

2 to 20 years: Girls
Body mass index-for-age percentiles

NAME _____

RECORD # _____

Date	Age	Weight	Stature	BMI*	Comments

***To Calculate BMI:** Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
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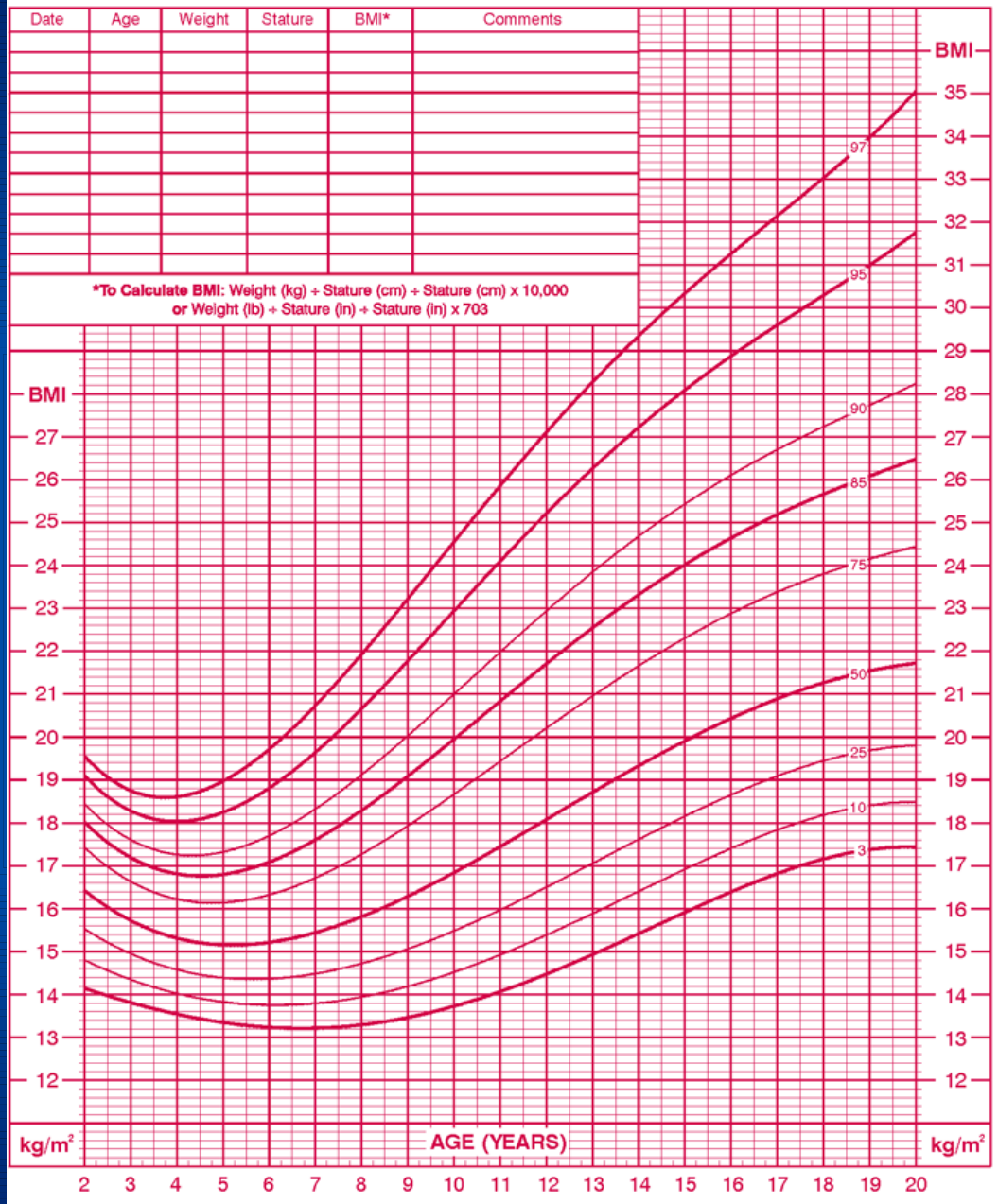

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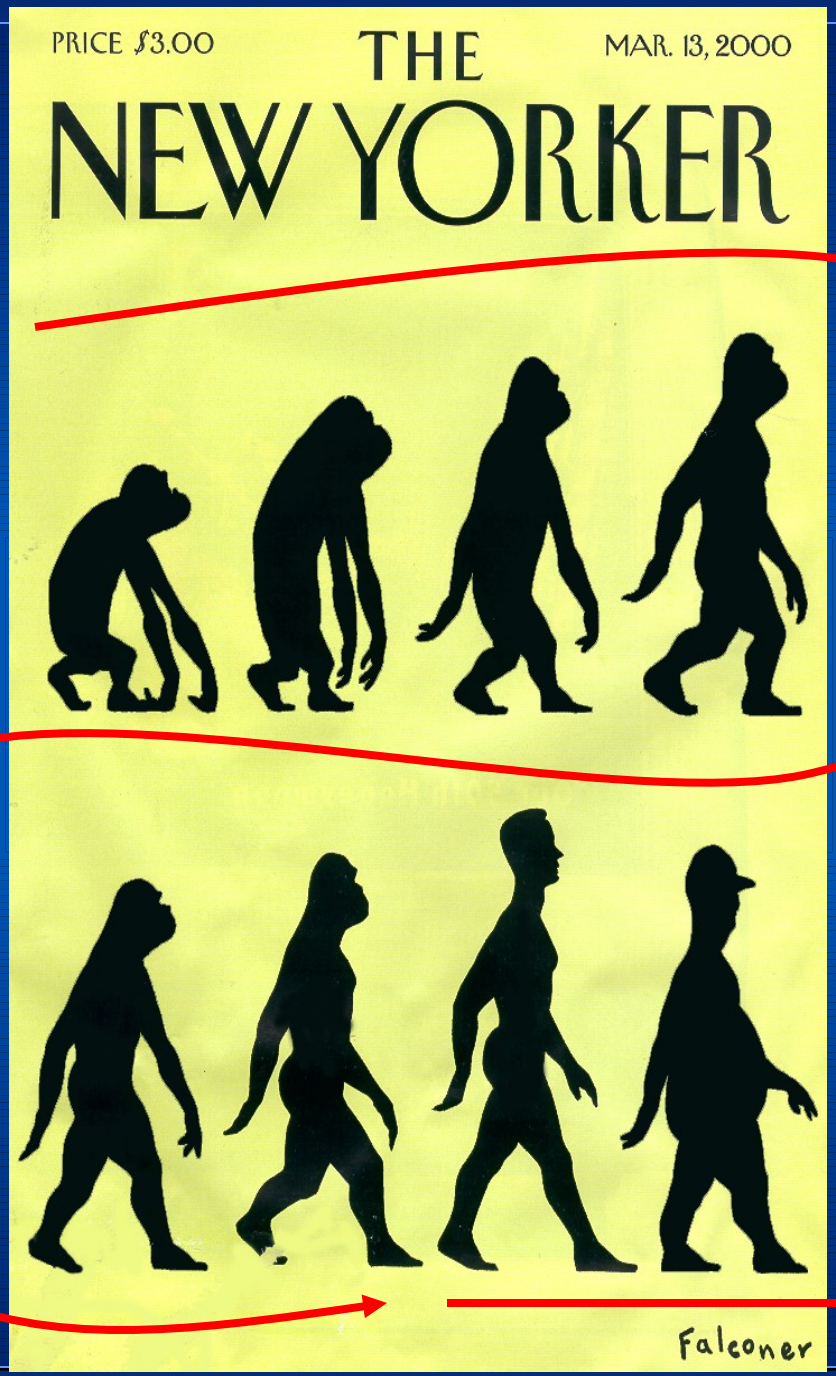
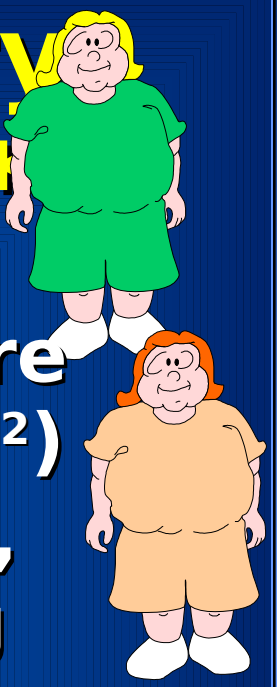
The Obesity Epidemic

Millions of Years



20 Years

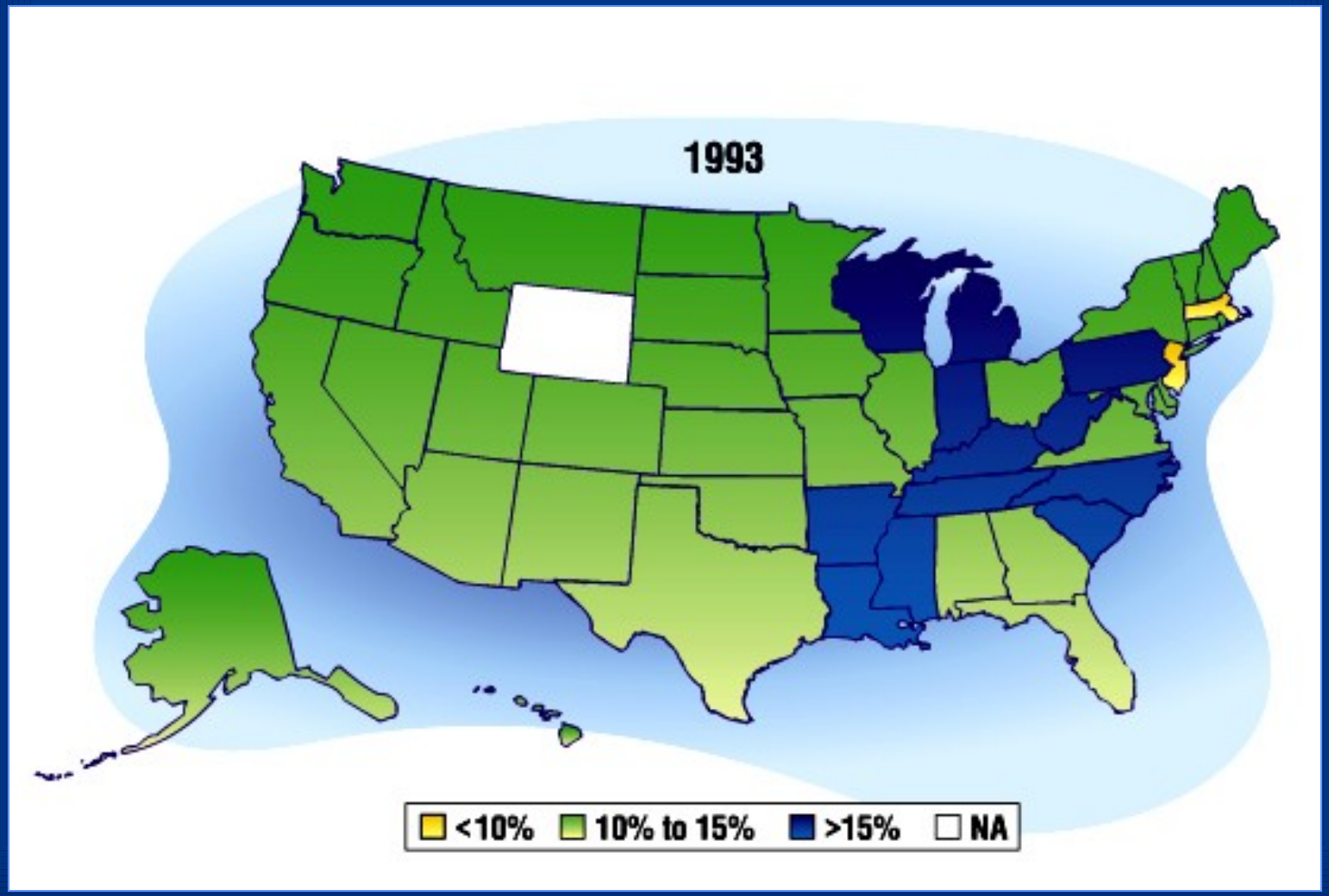
The Spread of Obesity in the United States*



- The proportion of US adults who are classified as obese (BMI ≥ 30 kg/m²) rose **49%** between 1991 and 1998, with the greatest increases among the youngest age group, most educated, and those of Hispanic ethnicity.
- During this time period, **obesity increased in every state**, in both sexes, and across all age groups, races, educational levels, and smoking statuses.

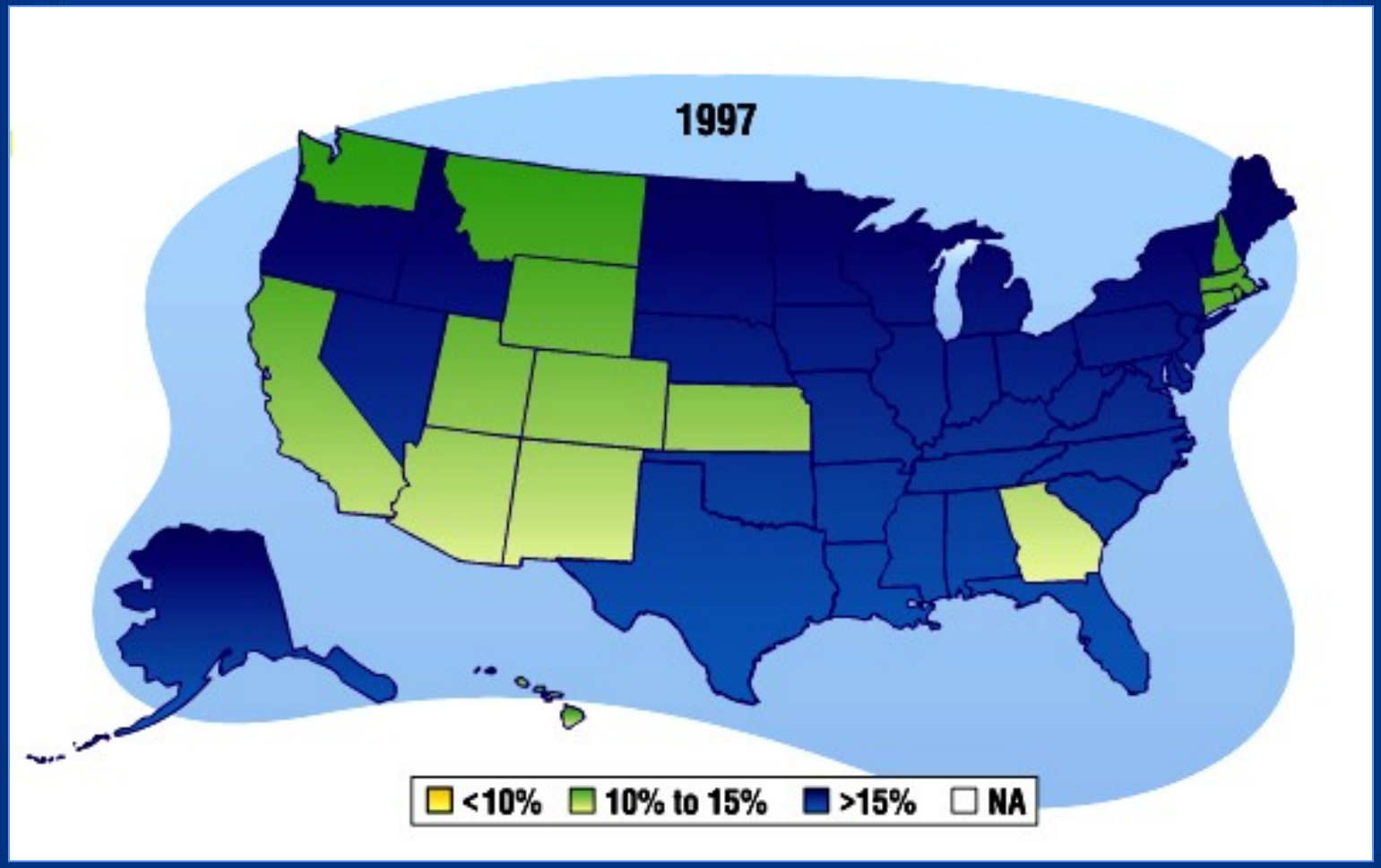
Mokdad, A. H. et al. JAMA 1999;28

Obesity Prevalence Rates



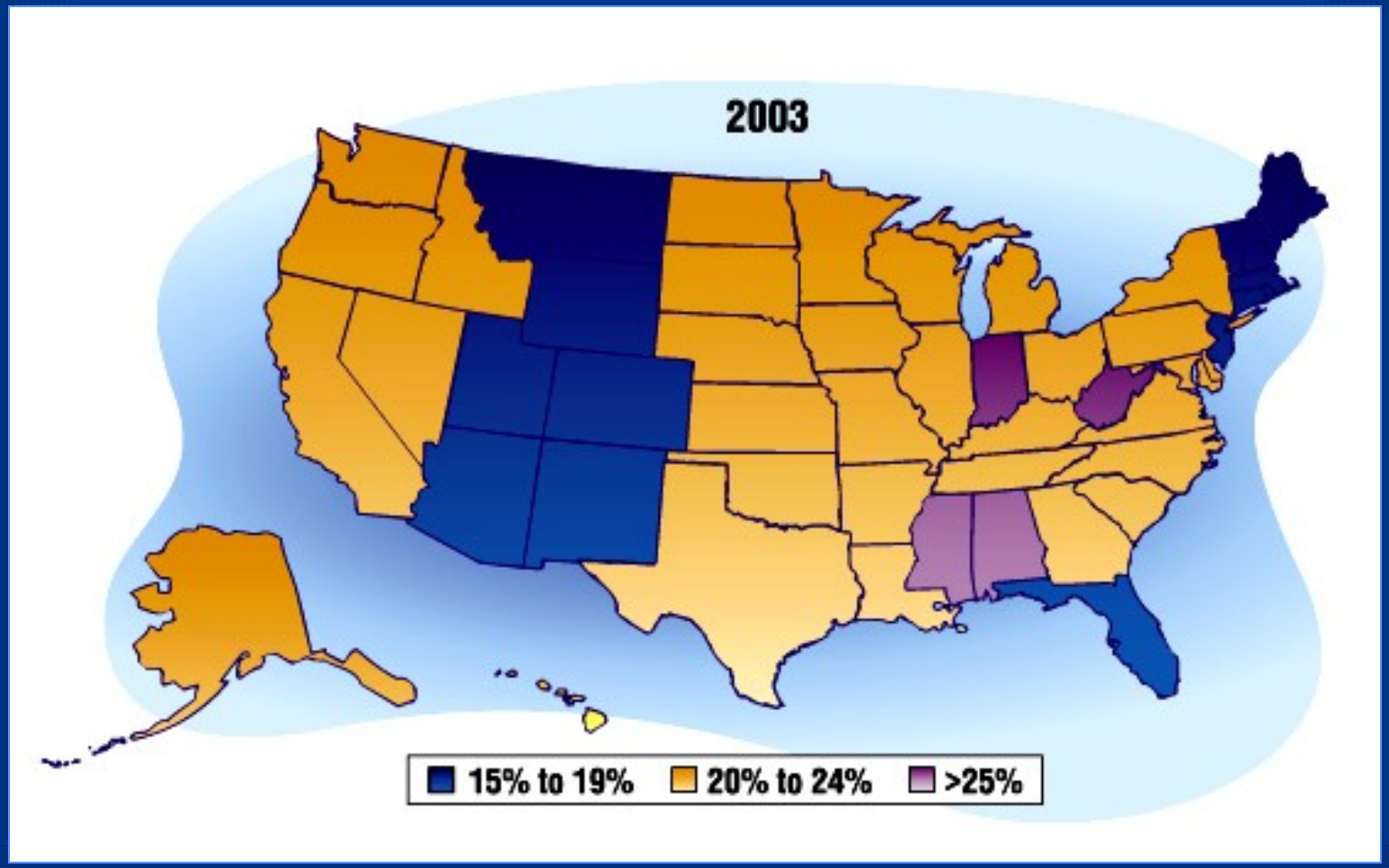
Centers for Disease Control & Prev. 2003. Trend Maps

Obesity Prevalence Rates



Centers for Disease Control & Prev. 2003. Trend Maps

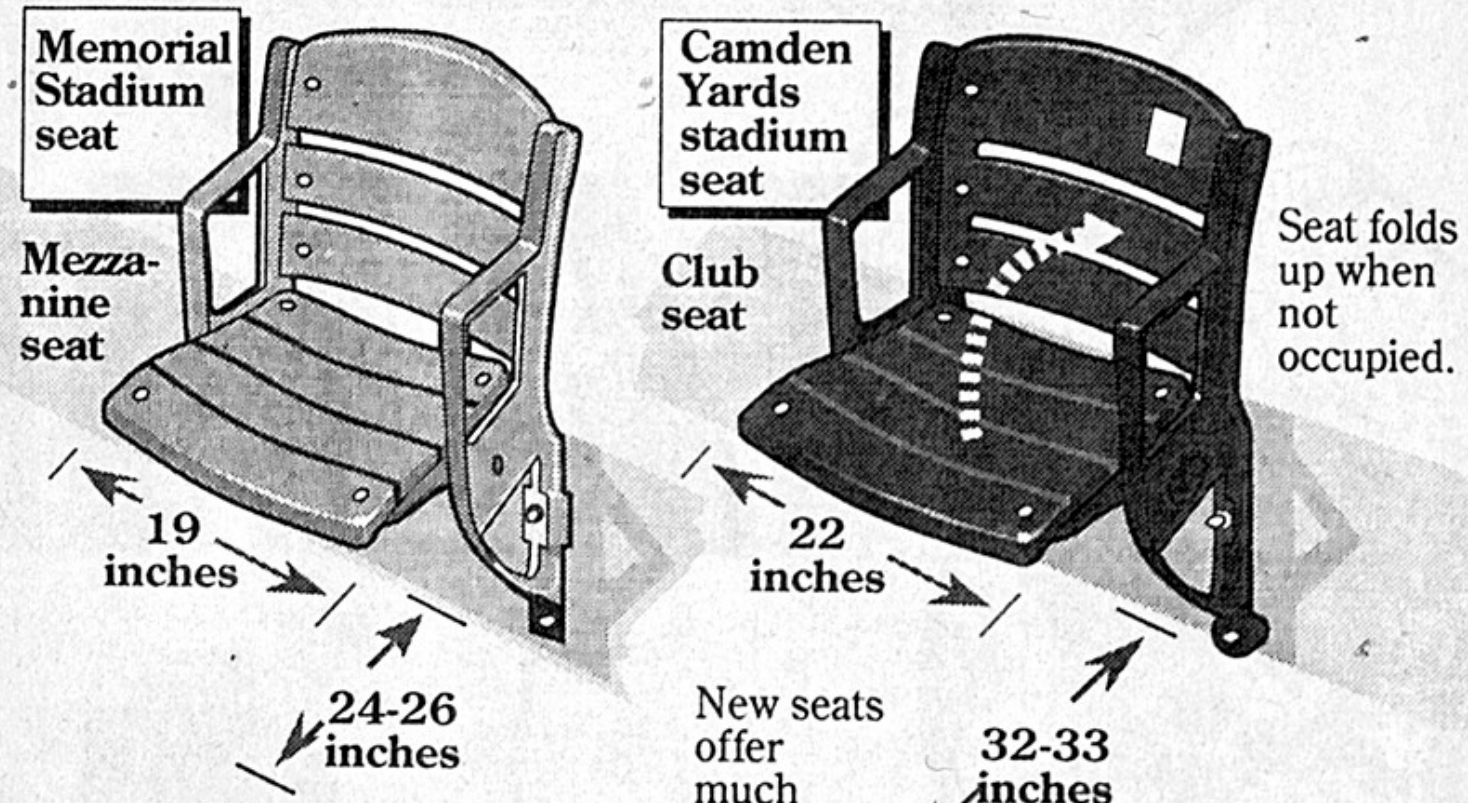
Obesity Prevalence Rates



Centers for Disease Control & Prev. 2003. Trend Maps

THE BOTTOM LINE

Seats for newer stadiums, like Baltimore's new ballpark, have been getting wider. Here's how the Club-level seats at the new park differ from those at the old stadium, built about 40 years ago.



Source: The Baltimore Sun

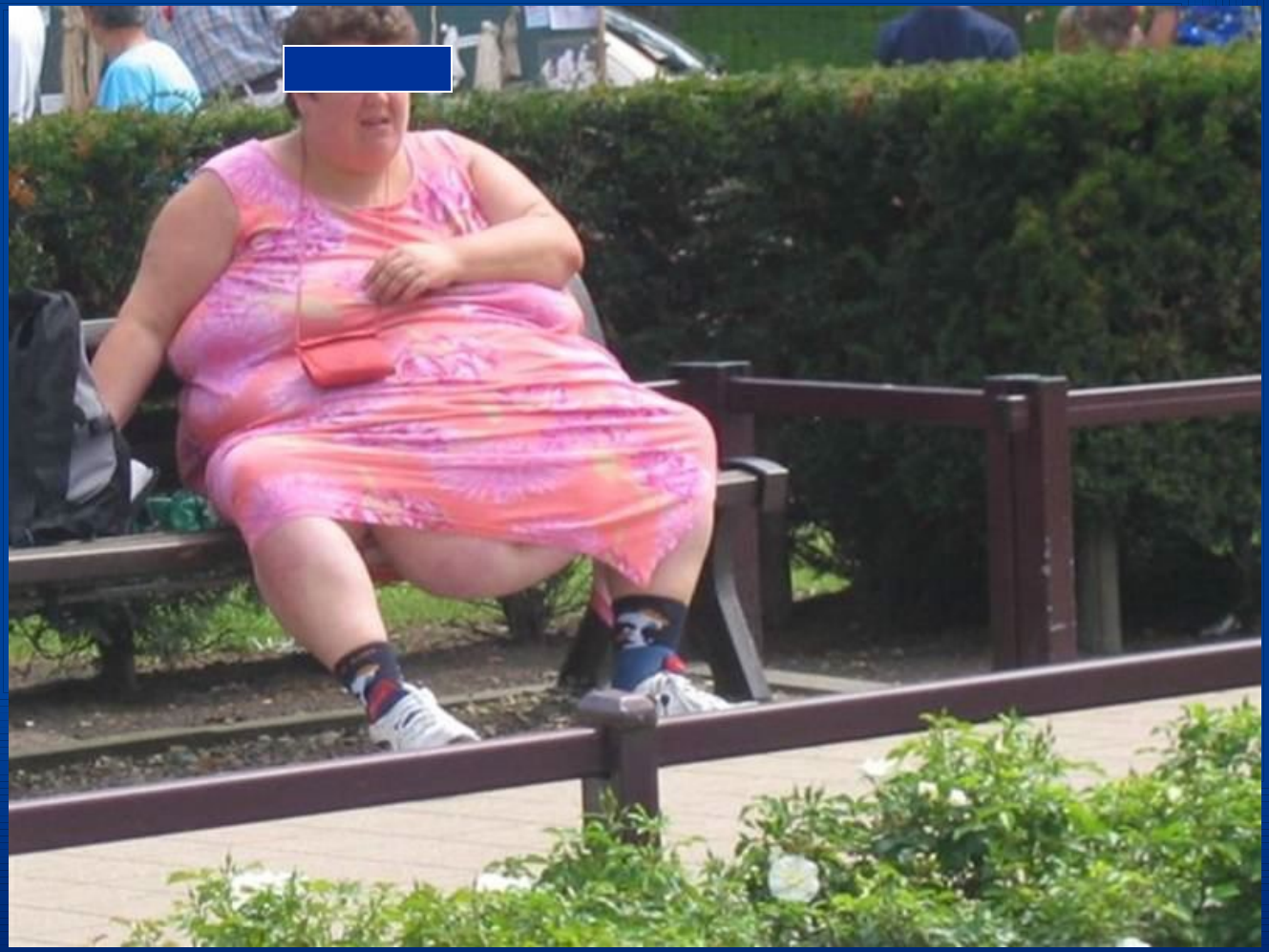
No Butts About It

An estimated 65% of Americans – over 100 million – are overweight or obese.

Even the clinically severe obese are increasing: between 1986 and 2000, those with BMI > 30, 40 and 50 kg/m², respectively, have doubled, quadrupled, and quintupled in the United States.

Sturm R. Arch Int Med 2003;163:2

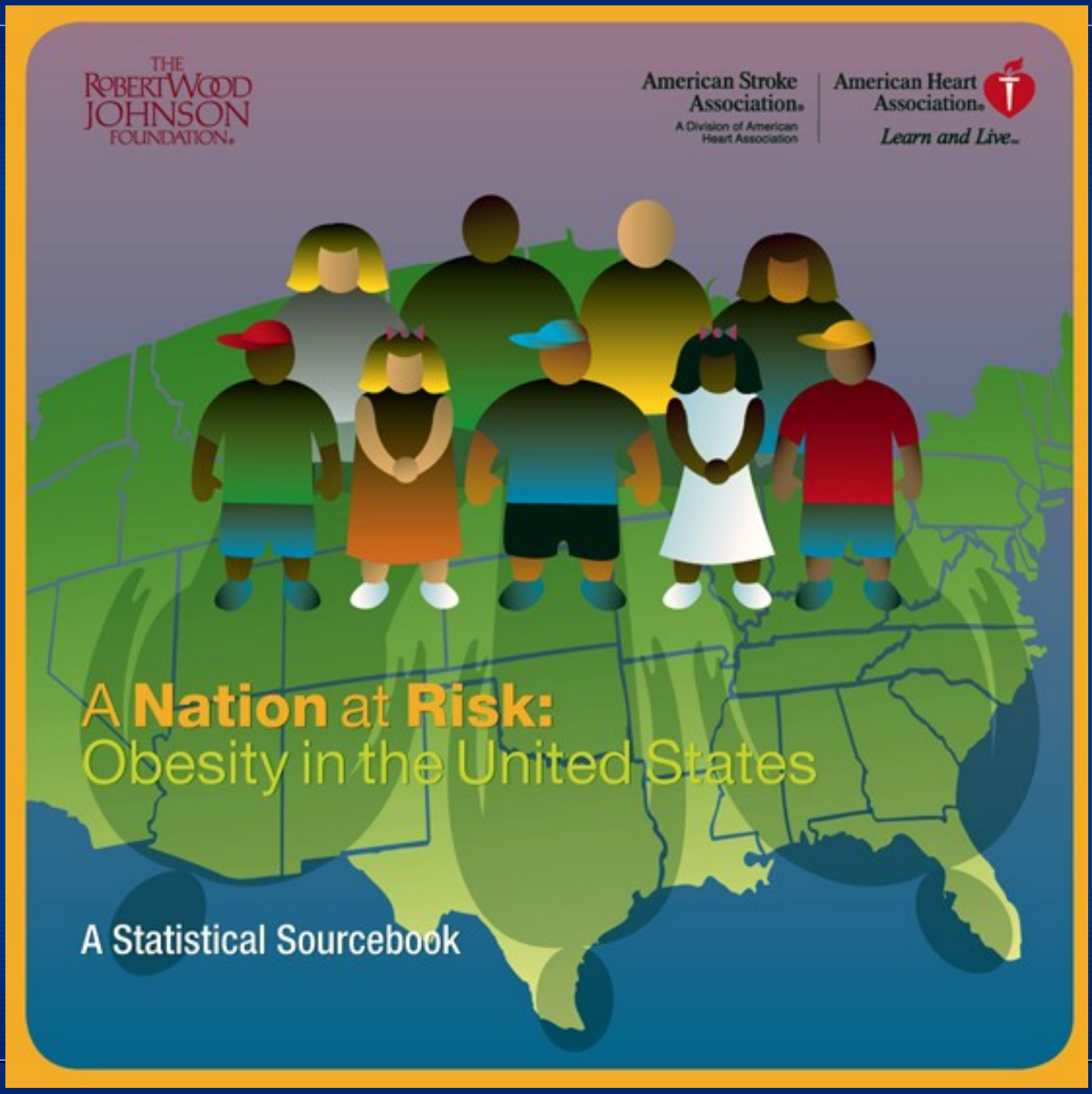
Morbid Obesity



Supersizing Doesn’t Stop

Goliath Caskets

The owners based the casket specifications on simple observations of the world around them. "It's just going to local restaurants or walking in a normal Wal-Mart - people are getting wider and they're getting thicker."


THE ROBERT WOOD JOHNSON FOUNDATION
American Stroke Association
A Division of American Heart Association
American Heart Association
Learn and Live
A Nation at Risk:
Obesity in the United States
A Statistical Sourcebook

Rapidly Rising Trend*

1980

2006

Today, more than twice as many children – and almost three times as many teens – are overweight as compared with 1980

edley AA et al. JAMA 2004;291:2847
Ogden CL et al. JAMA 2002;288:1728

Racial and Ethnic Disparities

Among children and adolescents, obesity is more common in African Americans and Hispanics.

Possible reasons include:

- ✓ **Unhealthy foods at home and in school**
- ✓ **Lack access to safe places to play (eg., parks)**
- ✓ **Many fast-food restaurants; few healthy markets**
- ✓ **Limited economic resources**

Obesity and Chronic Diseases

Diabetes

Heart Disease

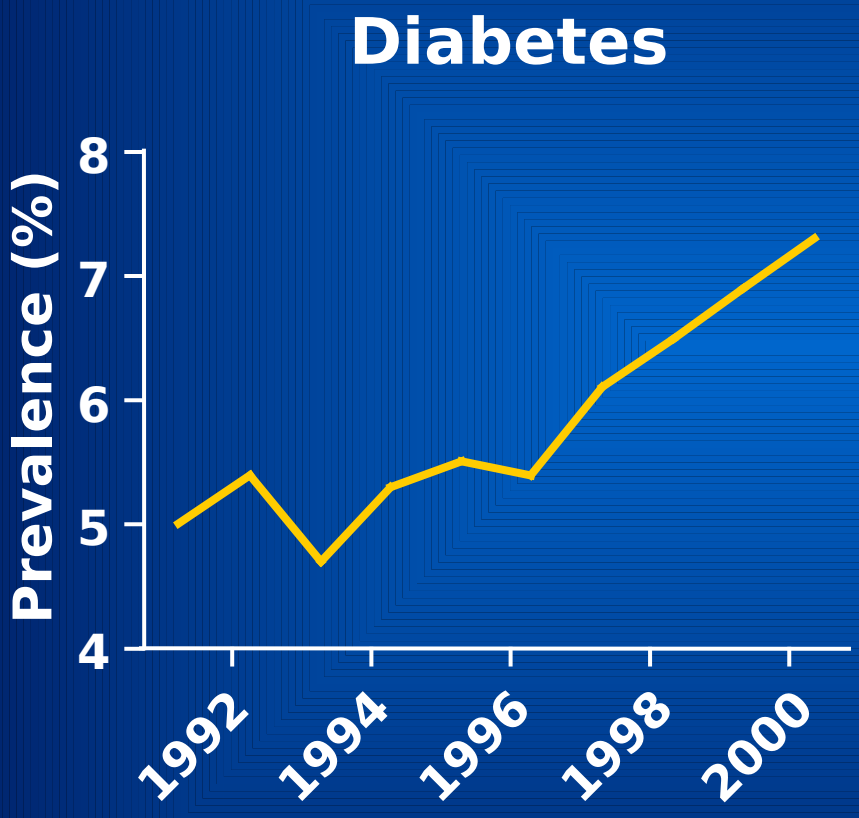
Cancer

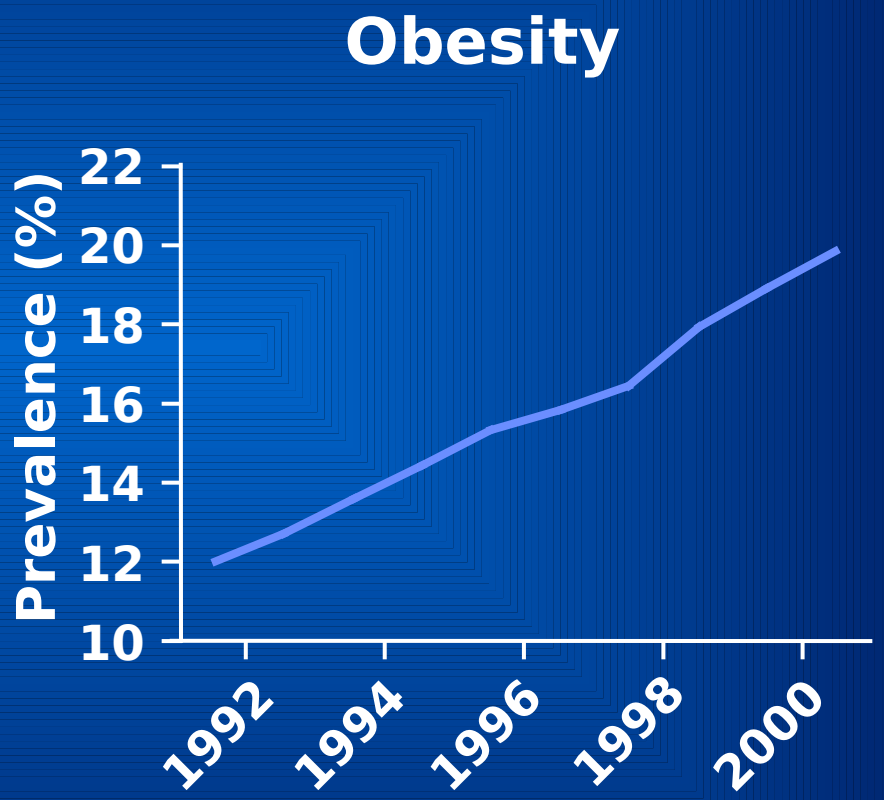
Musculoskeletal Disorders

Health Consequences of Obesity

- Type II diabetes
- Coronary heart disease
- Certain types of cancer
- Hypertension
- Osteoarthritis
- Gallbladder disease
- Insulin resistance (syndrome X)

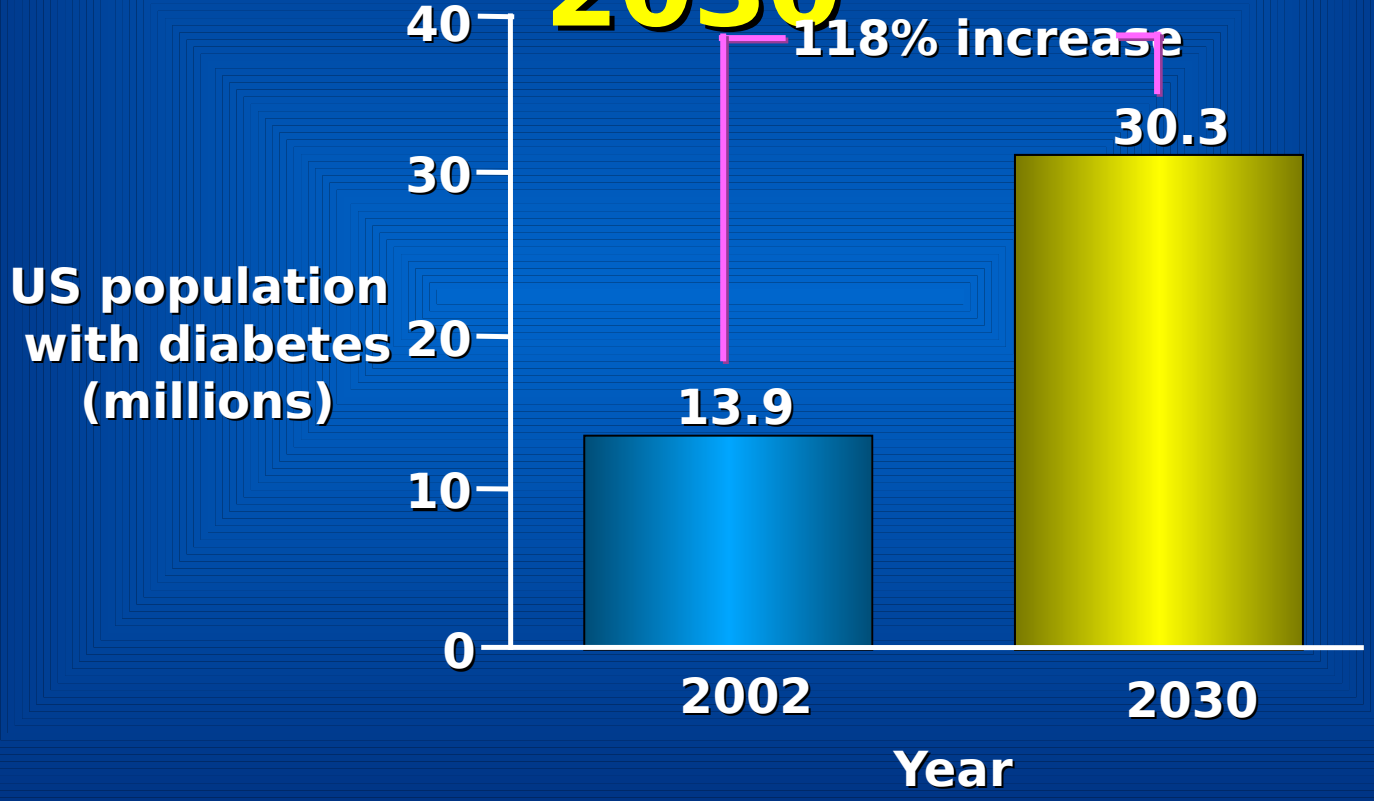
Worsening Trends in Diabetes and Obesity





Mokdad et al. JAMA. 1999;282:1519; Mokdad et al. Diabetes Care. 2000;23:1278; Mokdad et al. Diabetes Care. 2001;24:412; Mokdad et al. JAMA. 2001;286:1195;

Numbers of persons with diabetes will more than double by 2030



AHA. Heart Disease and Stroke Statistics–2005 Update.
Wild S et al. Diabetes Care. 2004;27:1047-53.

A threat to kidneys, life

Type 2 diabetes riskier for obese kids than adults, study suggests

By Lindsey Tanner
The Associated Press

CHICAGO — Children who develop obesity-related diabetes face a much higher risk of kidney failure and death by middle age than people who develop diabetes as adults, a study suggests.

The study offers some of the first strong evidence of the consequences of the nation's growing epidemic of type 2 diabetes in children, says William Knowler, a co-author and researcher with the National Institute of Diabetes and Digestive and Kidney Diseases.

The research also lends support to warnings that diabetes and other obesity-related ailments are on the verge of shortening average life spans in the USA.

The study involved Pima Indians in Arizona, who have disproportionately high rates of diabetes and obesity. They may be "the tip of the iceberg — letting us know what's in the future for the rest of America if we don't do something about the childhood obesity epidemic," says David Ludwig, director of Children's Hospital Boston's obesity program. He was not involved in the research.

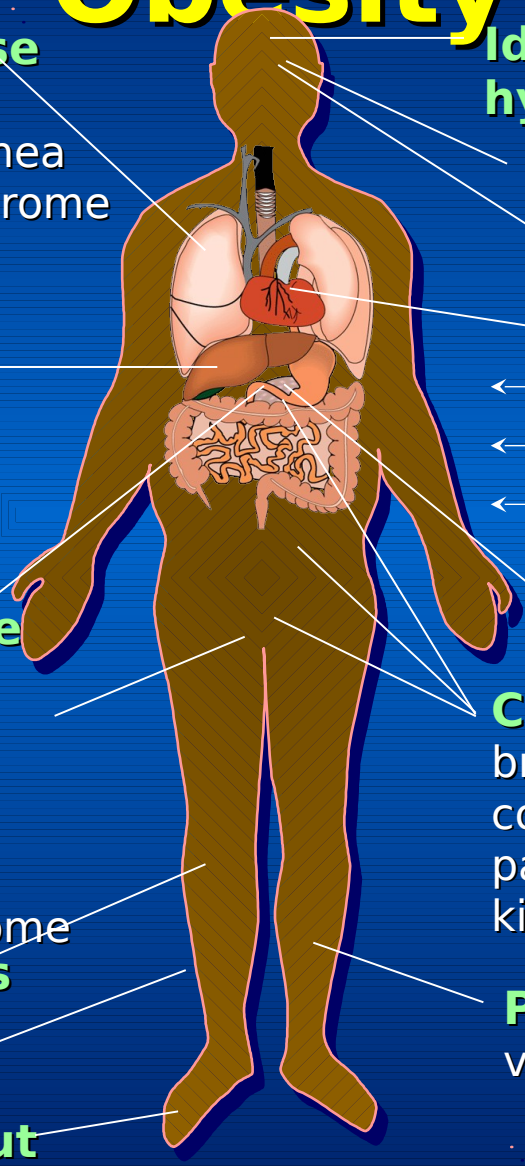
The study appears in today's *Journal of the American Medical Association.*

It involved a group of Indians whom National Institutes of Health researchers have been tracking since 1965. Of the 1,865 participants with type 2 diabetes, 96 developed it in childhood. The average age was 17.

During at least 15 years of follow-up, 15, or 16%, of those with childhood-onset type 2 diabetes developed end-stage kidney failure or died from diabetic kidney disease by age 55. That compared with 133, or 8%, of those who developed diabetes after age 20.

The researchers calculated that the incidence of end-stage kidney failure and death by age 55 was nearly five times higher in people who developed type 2 diabetes before age 20 than in those who developed diabetes during their adulthood.

Medical Complications of Obesity



Pulmonary disease
abnormal function
obstructive sleep apnea
hypoventilation syndrome

Idiopathic intracranial hypertension

Stroke

Cataracts

Nonalcoholic fatty liver disease
steatosis
steatohepatitis
cirrhosis

Coronary heart disease

Diabetes

Dyslipidemia

Hypertension

Gall bladder disease

Severe pancreatitis

Gynecologic abnormalities
abnormal menses
infertility
polycystic ovarian syndrome

Cancer
breast, uterus, cervix
colon, esophagus,
pancreas
kidney, prostate

Osteoarthritis

Phlebitis
venous stasis

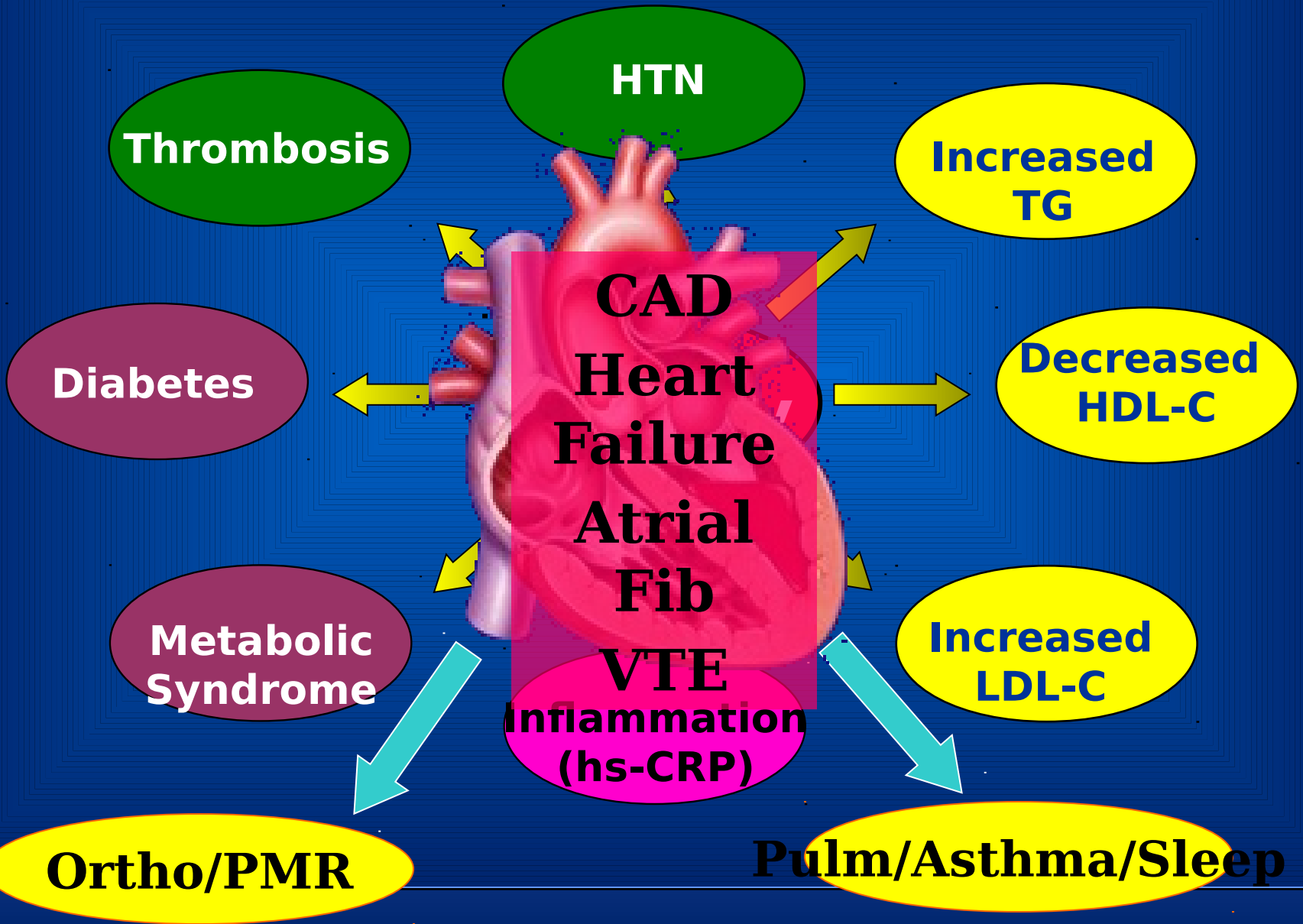
Skin

Gout

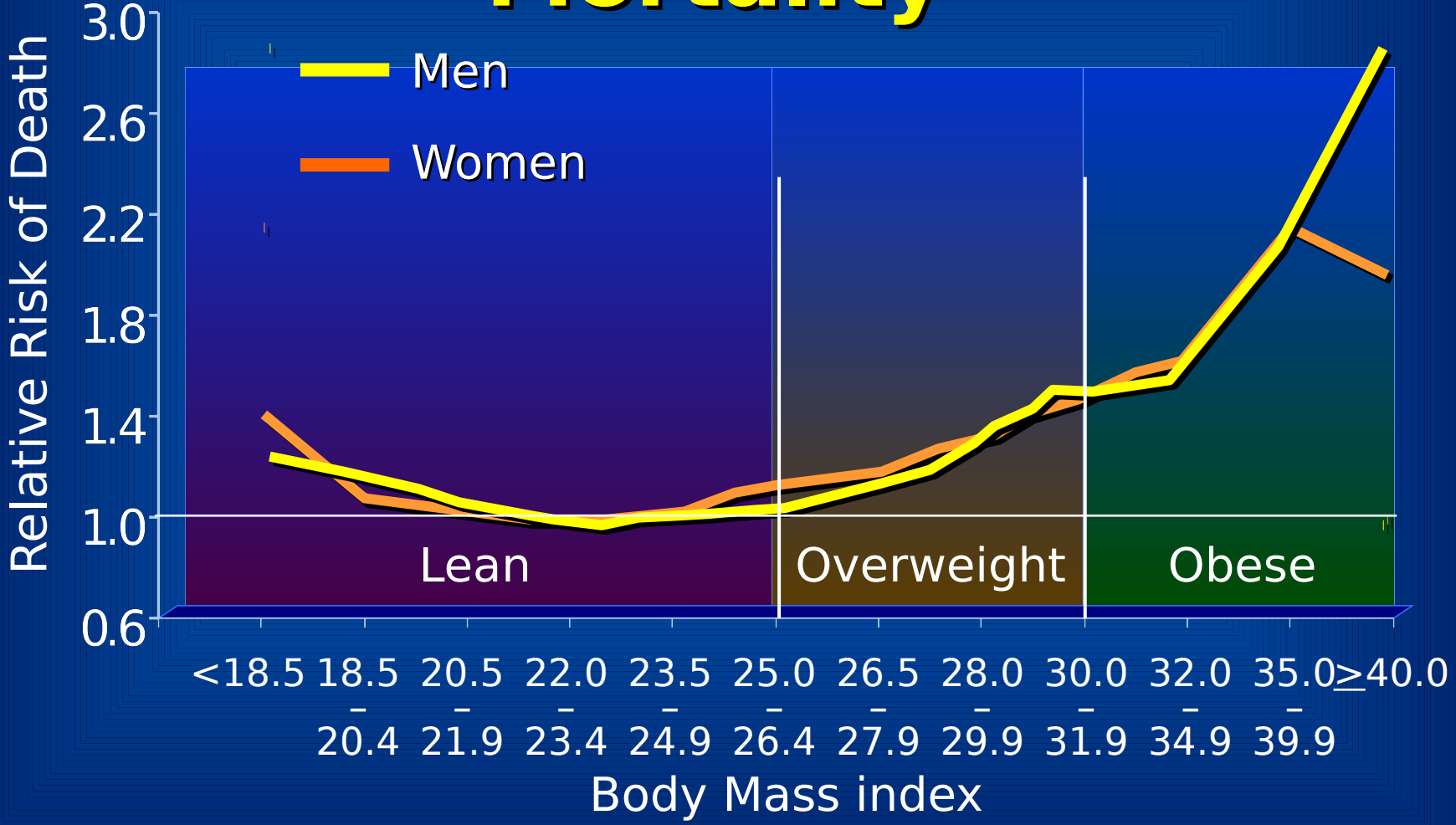
Lower Life Expectancy: Higher Health Costs

- Overweight/obese 40 year old man or woman will lose 3 to 7 years of life.
- For adults with BMI > 45, life expectancy decreases by up to 20 years.
- As BMI increases, so does the number of sick days, medical claims, and health care costs.

Obesity: The Only Central Risk Factor



Relationship Between BMI and Cardiovascular Disease Mortality



Calle et al. *N Engl J Med* 1999;341:1097.

60% of overweight children between ages 5 to 10 already have **1** coronary heart disease risk factor.

Clogged Arteries Showing Up in Kids

- Children with heart disease risk factors – obesity, high blood pressure, diabetes & high cholesterol – already show indications of fatty build-up in their arteries that could cause heart attacks when they're adults.
- Primary prevention of heart disease must start in childhood.
- 3,630 children, ages 5-18 took part in 26 studies across the globe.
- In many cases, children with heart disease risk factors showed early signs of atherosclerosis.

Obesity shortens the average lifespan, and if childhood obesity continues to increase, it could cut out 2 to 5 years from the average lifespan.

Result?

The current generation of children may become the first in American history to live shorter lives than their parents.

Causes of Obesity

Environment

Genetics

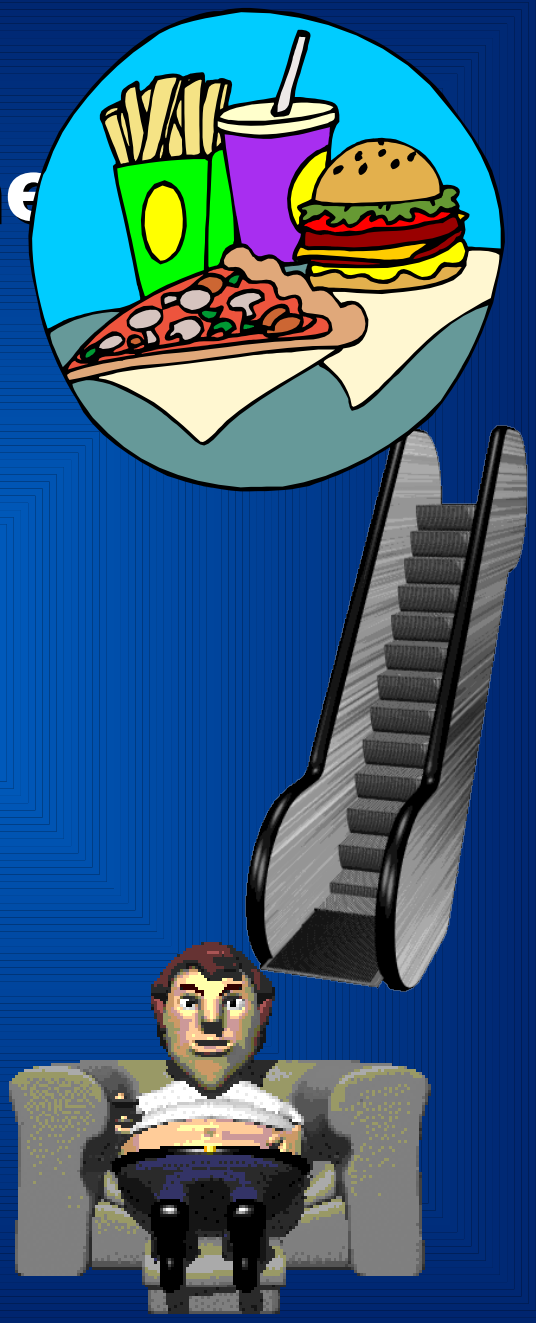
Fat children are not
fated to be fat adults,
but heredity can
weigh heavily

Genetic Contribution?

The genetic contribution to individual variations in body weight and fat stores lies somewhere between 25% and 70%.

Bouchard C et al. HumBiol 1985;57:61
Cardon LR et al. HumBiol 1994;66:465
Stunkard AJ et al. JAMA 1986;256:51

Genetics contribute to the overweight / obesity problem, but do not explain the 2-3 fold increase in prevalence over the last several decades.



LIES ABOUT SOCIAL SECURITY
BY ALLAN SLOAN
July 3, 2000 : $3.50
newsweek.msnbc.com
WATER ON MARS
New Hints of Life
'ME, MYSELF & IRENE'
The Wild Men of Comedy
Fat for Life?
Six Million Kids Are Seriously Overweight. What Families Can Do.
By Geoffrey Cowley & Sharon Begley

"the first generation where children will die before their parents"

International Congress on Obesity – August 2002

- Actually, 8 million children & adolescents are overweight.
- Over the last two decades, the rates for overweight

Marketing and Advertising in Schools

- Vending machines (CDC 2000)
  - 43% elementary schools
  - 74% middle schools
  - 98% high schools
- Exclusive soft drink contracts
  - Half of districts
- Direct advertising on vending machines, scoreboards, posters, book covers, banners and Channel One
  - 7 out of 10 ads for fast food, candy, soft drinks & chips
- Children exposed to 40,000 commercials/year
  - Candy – 32%
  - Sweetened cereals – 31%
  - Fast food – 9%

Physical education has been reduced or eliminated in many schools. Daily participation in physical education classes has declined among high school students from 42% in 1991 to 25% in 1995. Children seldom walk or ride bikes anymore (parents drive

Children's Television Viewing

Sedentary Time
(Hrs TV Viewed/Wk)

35
30
25
20
15
10
5
0

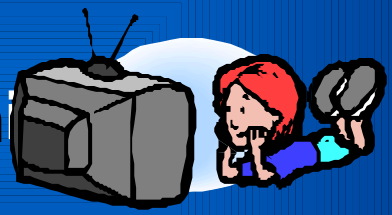
1940 1945 1950 1955 1960 1965 1970 1975 1980 1985 1990 1995

Year

Data from Multiple refe

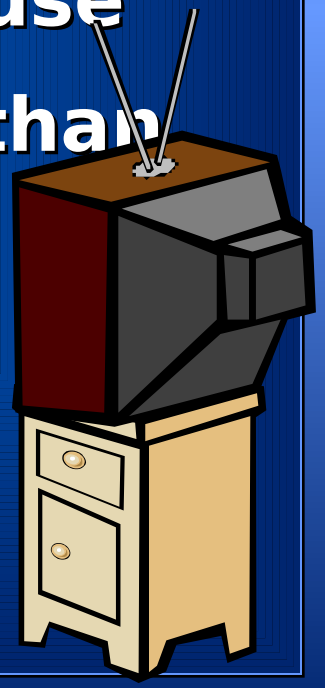
Technology's Sedentary Seduction*

- A survey of young people ages 8 to 18 showed their daily activities accounted for the following hours:
  - Watching TV – 3 hrs. 51 min.
  - Using the computer – 1 hr. 2 min.
  - Video games – 49 min.
  - Reading – 43 min.



**Generation M: Media in the Lives of 8-18 year olds*
Menlo Park, Calif., Kaiser Family

68% of children now have a **TV** in their **bedrooms** and **31%** have a **computer**. Kids with a TV watch about 1.5 hours/day more than those who don't. Kids who have a computer use it about 45 minutes more per day than those who don't.



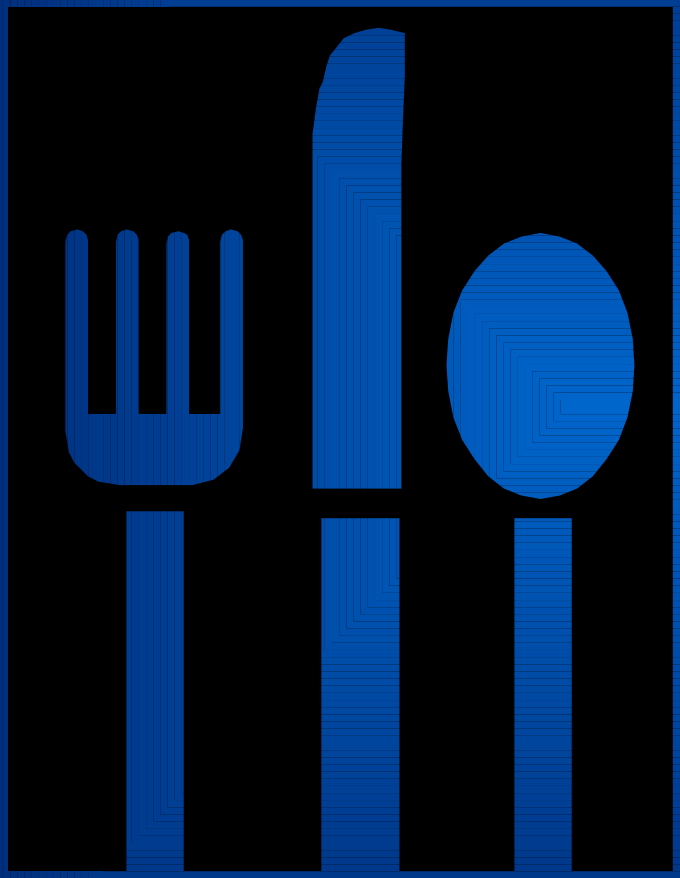
Kaiser Family Foundation Menlo Park, CA:2005

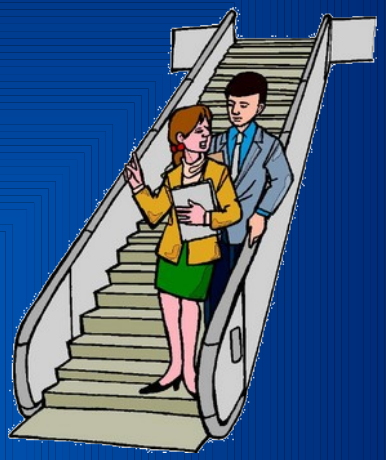
The Downside of Our Technological Revolution? An Obesity-Conducive Environment

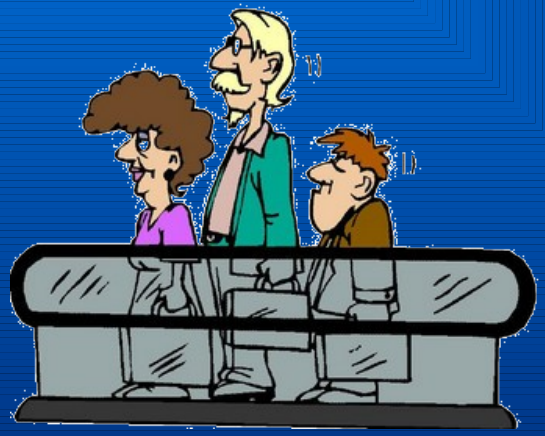
Barry A. Franklin, PhD

Am J Cardiol 2001;87:1093

Weapons of Mass Destruction







GLUTTONY

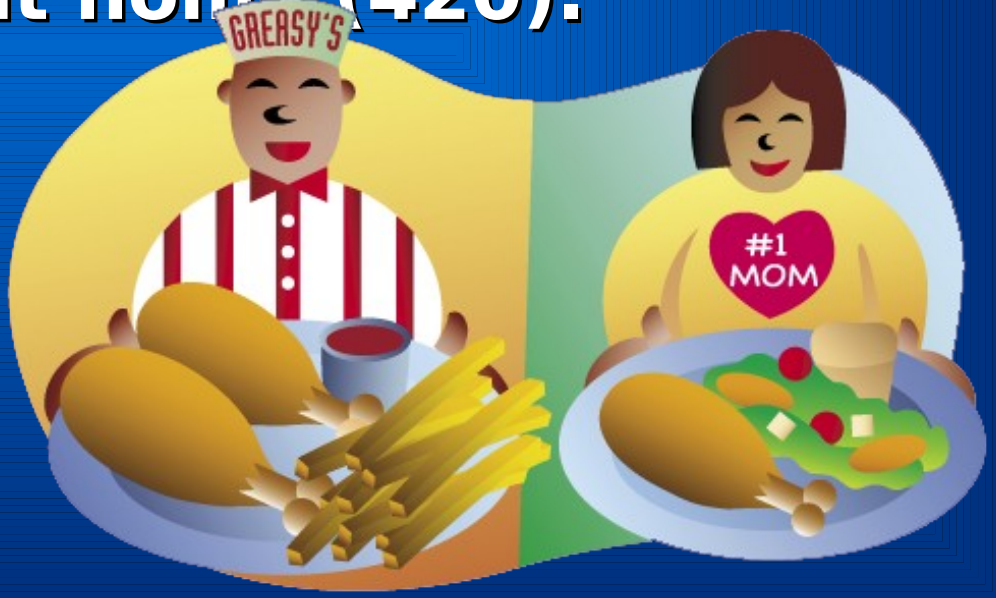
SLOTH

Eating Out : Haste Makes Waists

- 46% of food dollars are spent outside the home
- 44% eat at a restaurant on any given day
- Restaurant portion sizes tend to be 2-3 times “normal”
- Positive relationship between eating out, increased calories and body weight
- Restaurant meals tend to be higher in fat and calories, and lower in fiber, vitamins and minerals, than foods prepared at home

Eating Out

Children eat nearly twice as many calories (770) at restaurants as they do during a meal at home (420).



Zoumas-Morse C et al. J Am Diet Assoc 2001;101:923

Predominantly black neighborhoods have 1 additional fast-food restaurant per square mile compared with predominantly white neighborhoods.

These findings suggest that black and low-income populations have more convenient access to fast food.

Block JP et al. Am J Prev Med 2004;27:211

More convenient access likely leads to increased consumption of fast food in these populations, and may help to explain the increased prevalence of obesity among black and low-income populations.

Block JP et al. Am J Prev Med 2004;27:211

Contemporary Work Environment

- Extended drive time
- Meetings
- Computer interactions
- Cell phones
- Sitting on or waiting for airplanes
- Desk work
- Teleconferences
- Operating conveyors
- Dictaphones

Increasingly we are paid to think, to provide specific sedentary skills, or to communicate or process information.

Vending Machines

dot

our

Workplaces

distributing cheap

high-fat

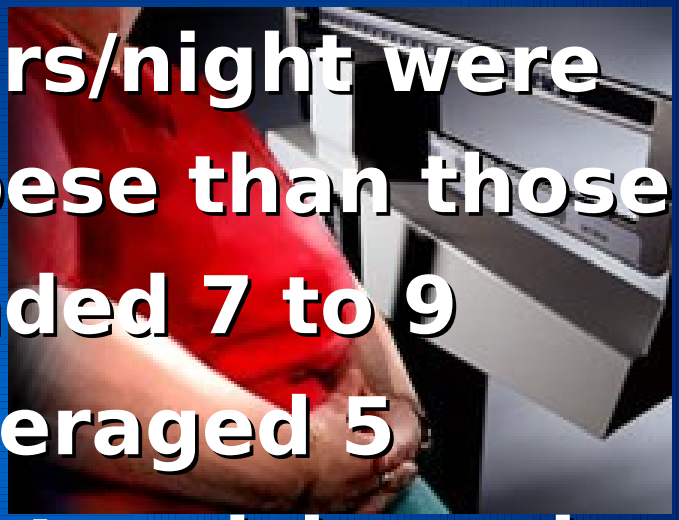
high-calorie

snacks

New Work

Environment?

Lack of Sleep → Excess Weight



Subjects who slept ≤ 4 hrs/night were 73% more likely to be obese than those who slept the recommended 7 to 9 hrs/night. Those who averaged 5 hrs/night had a 50% greater risk, and those who got 6 hrs/night were just 23% more likely to be substantially overweight.

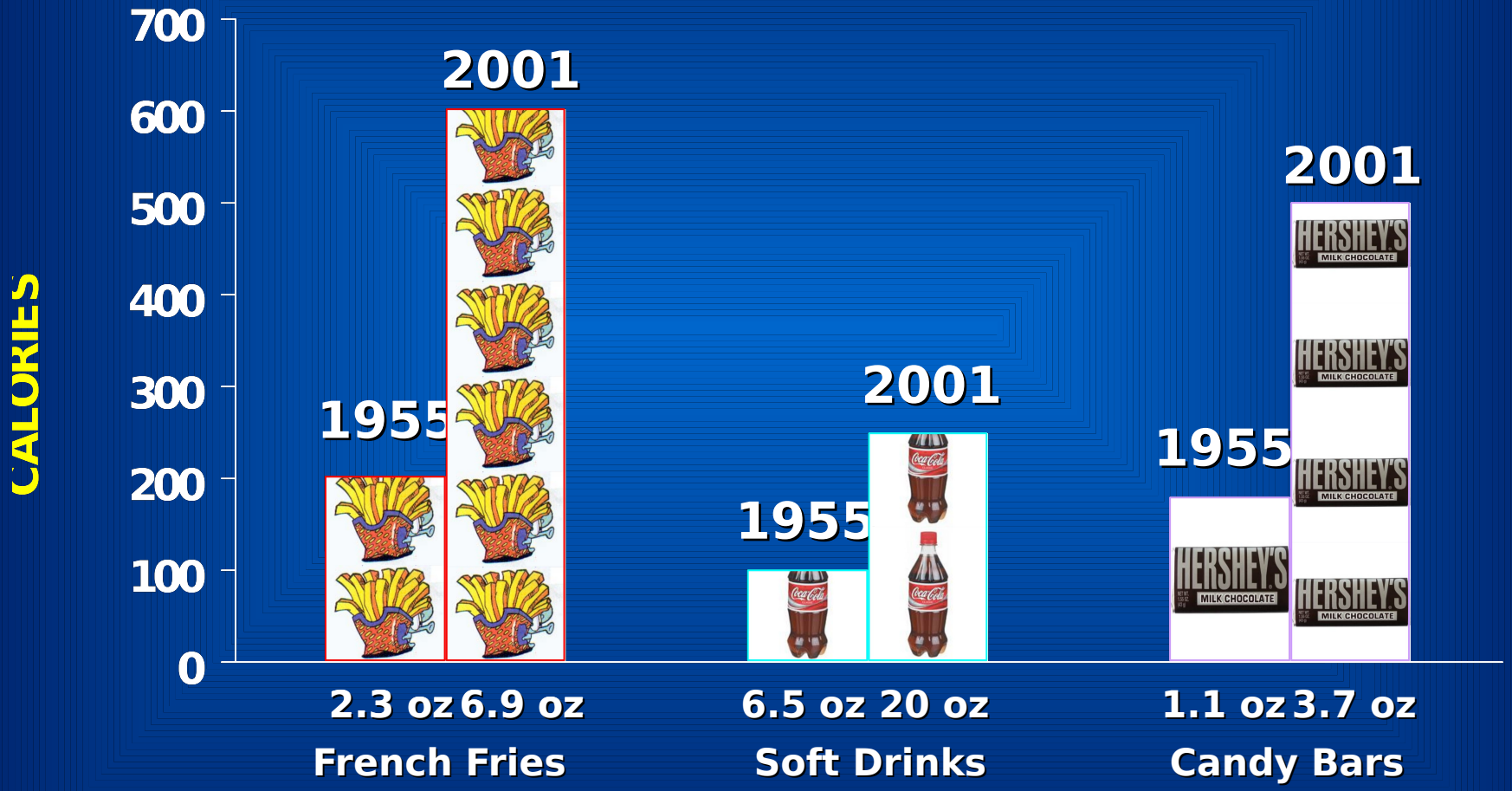
North American Association for the Study of Ob
Annual Scientific Meeting, Nov. 14-18,2004

RECENT TRENDS

Pizza - Pizza

Buy one pizza, get one free

Portion Sizes Have Increased



Nutrition Action, 200

The “Super-Sizing” of America

“This year, Americans will spend more money on fast food than on higher education…”

Eric Schlosser. *Fast Food Nation: The Dark Side of the All-American Meal*. Harper Collins. 2002.

Denny's Beer Barrel Pub in Pennsylvania known for the world's largest burger which weighs in at NINE pounds. It's main appeal "No One has Finished It!"

For $23.95 it comes with all the fixins:

2 Tomatoes
Half a head of lettuce
12 slices of American cheese
Full cup of peppers
2 Onions
Plus a river of Mayo, Mustard and Ketchup
and topped with Pickles!

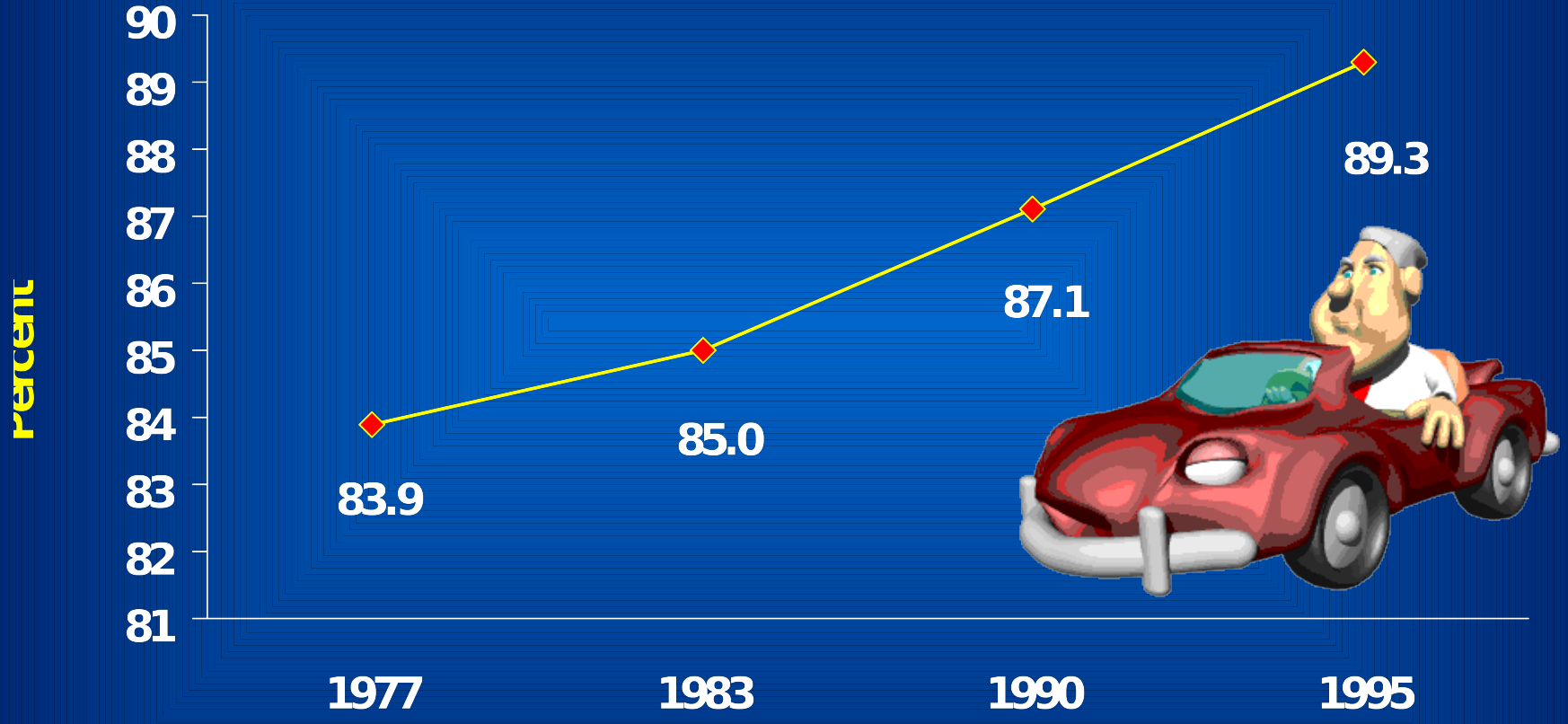
NOW THAT'S ONE BIG BURGER!!!!!

COME

The Elimination of Physical Activity From Our Daily Lives in the 21st Century

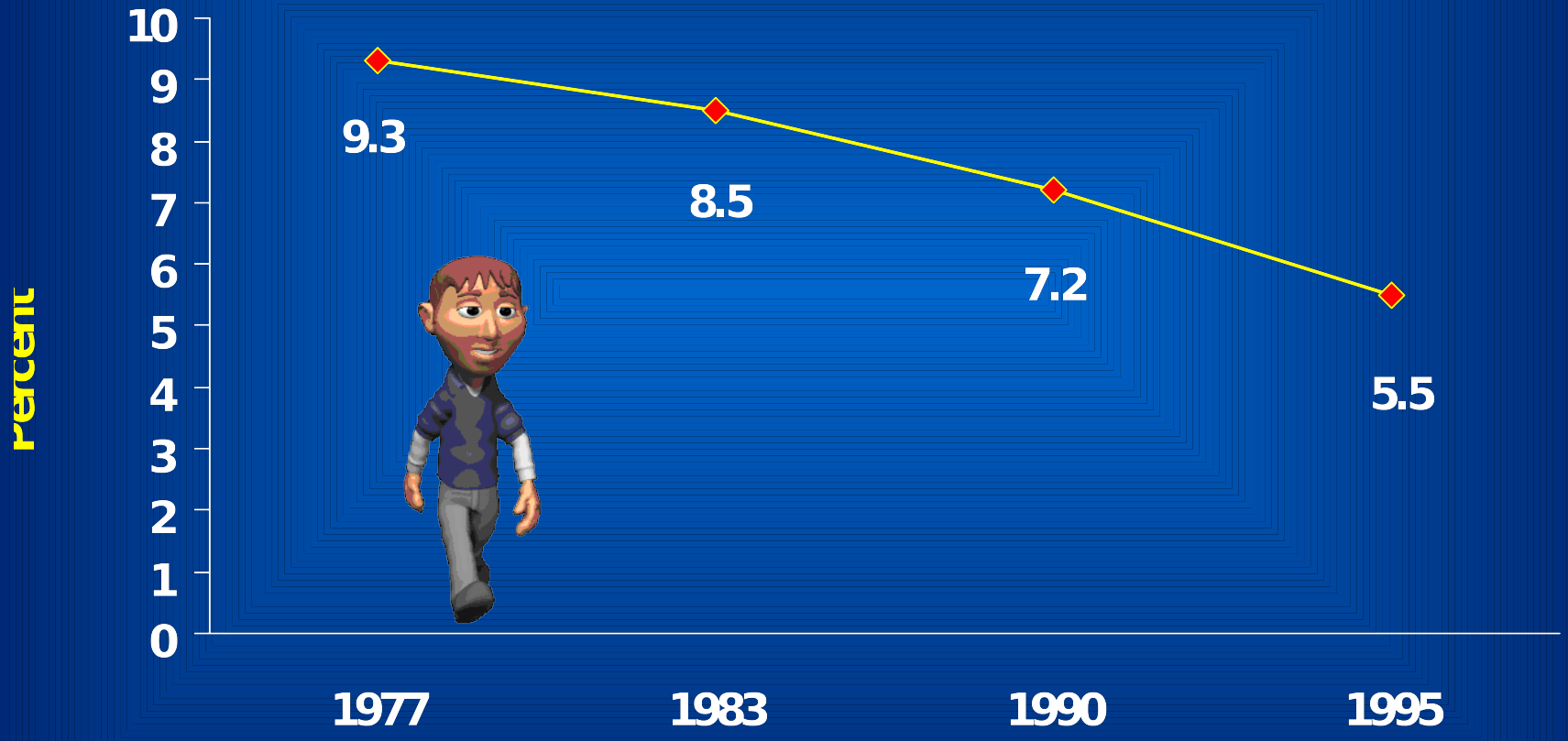
1900 A.D.	2006 A.D.
Walking	No sidewalks, electric scooter, motorized walkways, automobile
Riding bike to school	Unsafe streets
Stairs	Elevators, escalators
Sweeping with broom	Vacuuming
Plowing field	Tractor with air conditioning and radio
Picking crops	Mechanized harvesters
Filing papers	Computers
Carrying messages	E-mail, telephone, fax
Washing dishes	Dishwasher
Painting a house with brush	Spray paint
Sawing a tree limb	Power saw
Washing clothes	Washing machine
Hanging clothes out to dry	Dryer
Shoveling snow	Snow blower
Sharpening pencil	Electric pencil sharpener
Walking to library	Internet
Opening cans	Electric can opener

Percentage of All Trips Made By Automobile, 1977 - 1995



National Personal Transportation Survey, 1995

Percentage of All Trips Made From Home by Walking, 1977 - 1995



National Personal Transportation Survey, 1995

CANINE CONSTITUTIONAL

A brisk walk in the park keeps Marey II in shape between dog shows. His owner, Columbus resident Cathy Stumbo, got up early to give her 3-year-old Doberman his regular workout. They typically log 15 miles in Berliner Park.

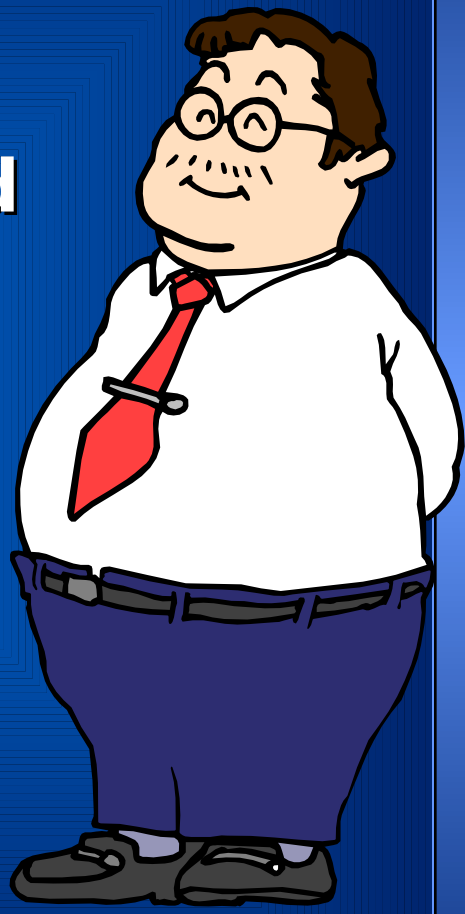
24
FITNESS

Fitness, Fatness and Mortality

Physical Fitness

*Mortality and Obesity**

- **Overweight men demonstrated higher mortality rates compared with normal weight men.**
- **Fit men (those who exercised regularly) had comparable mortality regardless of BMI.**
- **Normal weight men who were unfit were nearly 3 times as likely to die young compared with their overweight counterparts who exercised.**



***Barlow et al. Int J Obesity 1995;19:S4.**

	n	Man-years (MY)	# of Deaths	Age-adj rate/10,000 MY
< 27 BMI	17,178			
Low*		25,537	133	52.1
		64,103	180	28.6
Moderate**		57,004	119	20.0
High†				
27-30 BMI	5,277			
Low*		15,000	63	49.1
		20,749	67	29.8
Moderate**		7,341	17	19.7
High†				
> 30 BMI	2,934			
Low		14,301	75	62.1
Mod-High		8,240	19	18.0

*Fit … **Fit … †Fit …

ORIGINAL CONTRIBUTION

Relationship Between Low Cardiorespiratory Fitness and Mortality in Normal-Weight, Overweight, and Obese Men

Ming Wei, MD, MPH
James B. Kampert, PhD
Carolyn E. Barlow, MS
Milton Z. Nichaman, MD, ScD
Larry W. Gibbons, MD, MPH
Ralph S. Paffenbarger, Jr, MD, DrPH
Steven N. Blair, PED

Context Recent guidelines for treatment of overweight and obesity include recommendations for risk stratification by disease conditions and cardiovascular disease (CVD) risk factors, but the role of physical inactivity is not prominent in these recommendations.

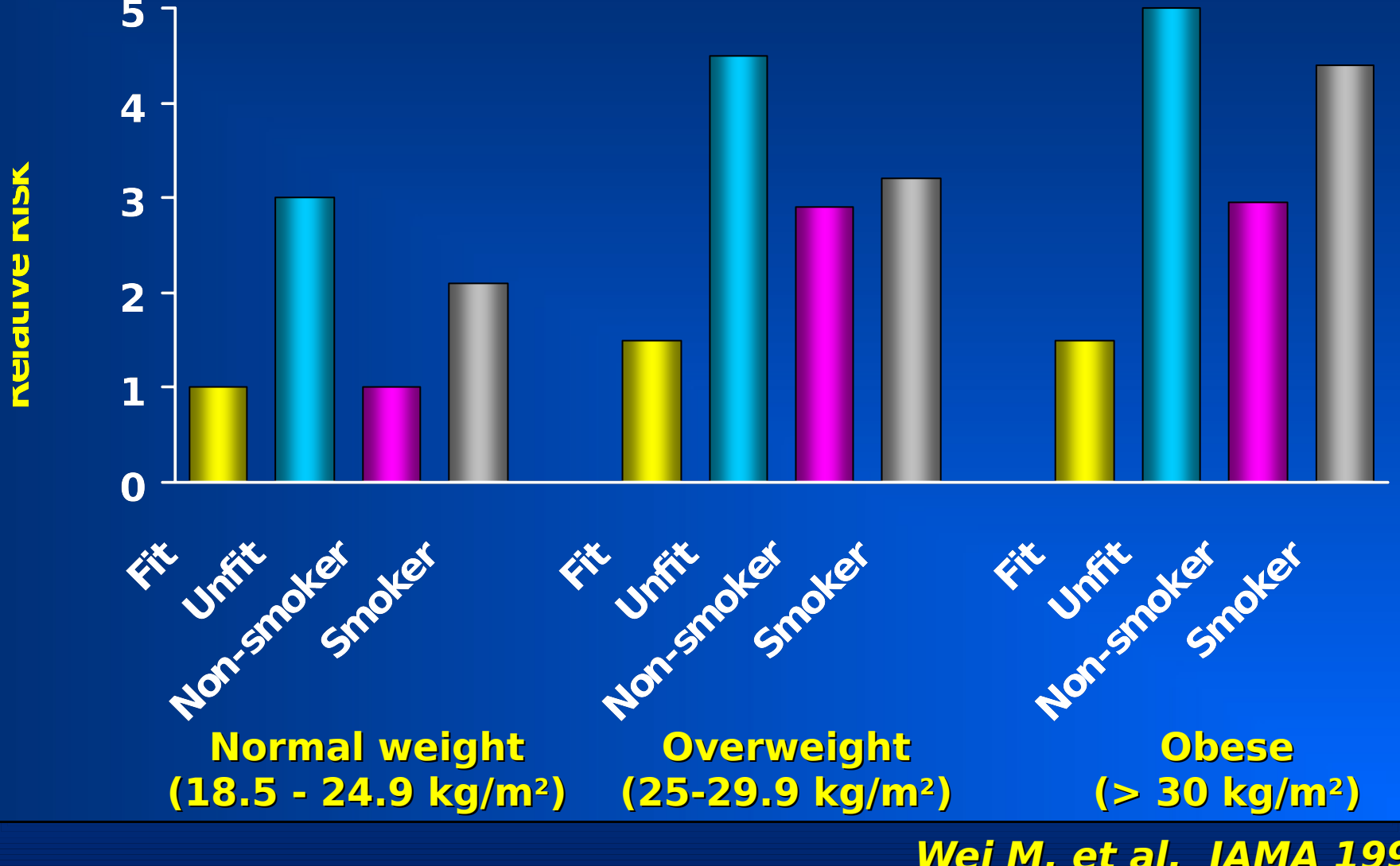
Objective To quantify the influence of low cardiorespiratory fitness, an objective marker of physical inactivity, on CVD and all-cause mortality in normal-weight, overweight, and obese men and compare low fitness with other mortality predictors.

Design Prospective observational data from the Aerobics Center Longitudinal Study.

Setting Preventive medicine clinic in Dallas, Tex.

Participants A total of 25 714 adult men (average age, 43.8 years [SD, 10.1 years])

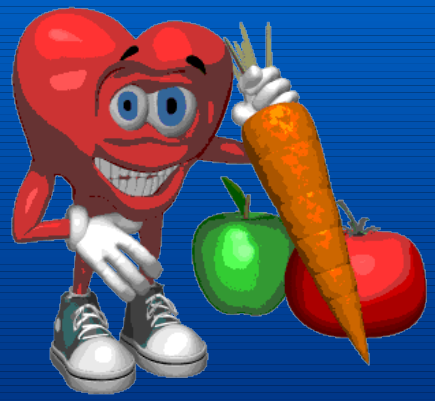
Low Cardiovascular Fitness Increases Relative Risk of All-Cause Mortality vs. Being Fit



Wei M. et al. JAMA 1999;2

Although physical activity or exercise training may not make all people lean, it appears that an active way of life may have important health benefits, even for those who remain overweight.

Treatment Options: Lifestyle Modification



Themes in Obesity Treatment

- Prevent weight gain if your weight in normal range
- Lose weight if you are overweight (BMI ≥ 25 < 30) with co-morbidities or are obese (BMI > 30)
- Even modest weight loss (e.g., 5-10% of body weight) is beneficial, benefit increases with greater weight loss

Themes in Obesity Treatment

- Weight is lost if the calorie intake is < the energy expended in daily activities – the breakdown by protein, fat & carbohydrate is less critical

  - Physical activity is important (30-60 min/day) (Physical inactivity is another independent risk factor)
  - Short-term rapid weight loss diets are usually failures in the long run
  - Diet is more effective than exercise in causing initial weight loss
  - A regular exercise regimen is the best

How Much Exercise is Enough?

Four recent guidelines suggest that the 30 minutes/day Surgeon General Report and ACSM/CDC recommendation may be insufficient to counteract the obesity trend in sedentary adults.

ACSM Position Stand. Med Sci Sports Exerc 2001;33:2145

Institute of Medicine. Dietary reference … 2002;3:3

WHO. Diet, nutrition…Series 916. Geneva 2003

Saris WHM et al. Obes Rev 2003;4:101

Med. Sci. Sports Exerc. Vol 36, No. 1, pp. 79-85, 2004

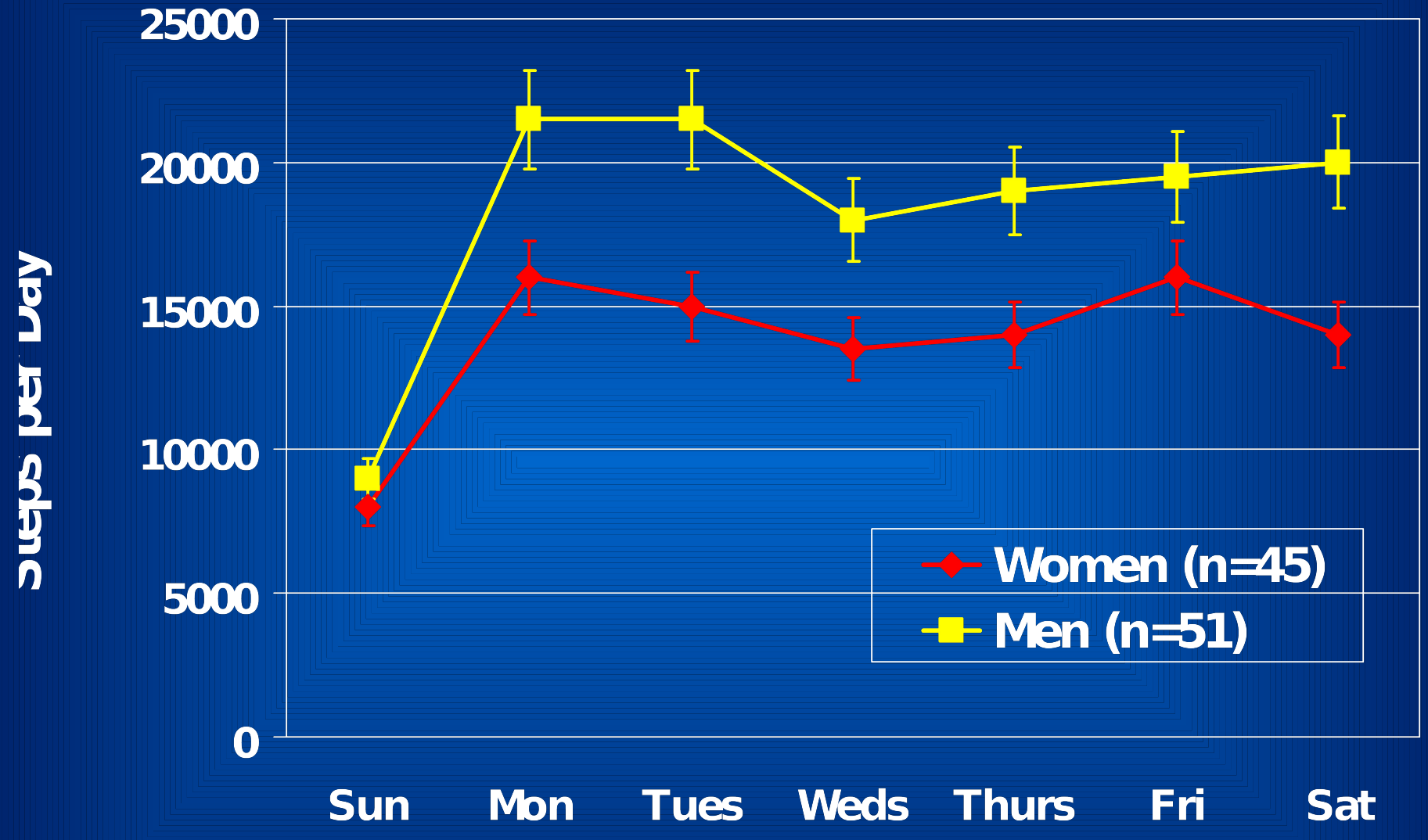
Physical Activity in an Old Order Amish Community

DAVID R. BASSETT, JR.[1], PATRICK L. SCHNEIDER[1], and GERTRUDE E. HUNTINGTON[2]

[1]Department of Health and Exercise Science, University of Tennessee, Knoxville, TN; and [2]Department of Anthropology (retired), University of Michigan, Ann Arbor, MI

ABSTRACT

BASSETT, JR., D. R., P. L. SCHNEIDER, and G. E. HUNTINGTON. Physical Activity in an Old Order Amish Community. *Med. Sci. Sports Exerc.*, Vol. 36, No. 1, pp. 79–85, 2004. One method to assess the impact of modern technology on physical activity is to examine a group whose lifestyle has not changed markedly in the last 150 yr. The Old Order Amish refrain from driving automobiles, using electrical appliances, and employing other modern conveniences. Labor-intensive farming is still the preferred occupation. **Purpose:** The purposes of this study were to characterize the physical activity (PA) levels in an Old Order Amish farming community and to examine measures of adiposity in this group. **Methods:** Ninety-eight Amish adults (18–75 yr of age) in southern Ontario were studied. Anthropometric variables included height, weight, body mass index (BMI), and percent body fat (% BF). Participants were asked to wear an electronic pedometer for 7 d and to fill out a log sheet on which they recorded steps per day and physical activities. After 1 wk, they returned the pedometers and log sheets and filled out the International Physical Activity Questionnaire. **Results:** The average number of steps per day was 18,425 for men versus 14,196 for women ($P < 0.05$). Men reported 10.0 $h \cdot wk^{-1}$ of vigorous PA, 42.8 $h \cdot wk^{-1}$ of moderate PA, and 12.0 $h \cdot wk^{-1}$ of walking. Women reported 3.4 $h \cdot wk^{-1}$ of vigorous PA, 39.2 $h \cdot wk^{-1}$ of moderate PA, and 5.7 $h \cdot wk^{-1}$ of walking. Men had higher levels of energy expenditure than women ($P < 0.001$). A total of 25% of the men and 27% of the women were overweight (BMI $\geq$ 25), and 0% of the men and 9% of the women were obese (BMI $\geq$ 30). **Conclusions:** The Amish we studied had very high levels of physical activity, which may contribute to their low prevalence of obesity. This group probably represents an upper extreme for "lifestyle PA" in North America today. **Key Words:** FARMING, LIFESTYLE ACTIVITY, PEDOMETER, QUESTIONNAIRE, OBESITY, OVERWEIGHT



Bassett DR et al. Med Sci Sports Exerc 2004;36:7

Men reported 10 hrs / wk of vigorous physical activity (PA), 43 hrs / wk of moderate PA, and 12 hrs / wk of walking. Women reported 3 hrs / wk of vigorous PA, 39 hrs / wk of moderate PA, and 6

A total of 25% of the men and 27% of the women were overweight (BMI ≥ 25), and 0% of the men and 9% of the women were obese (BMI ≥ 30).

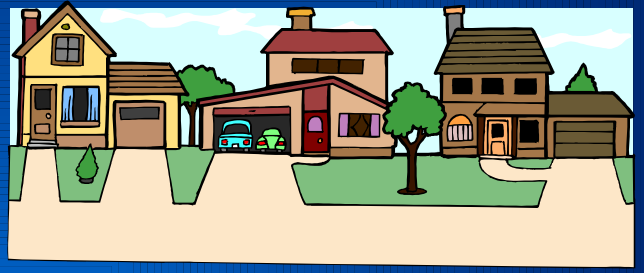
Bassett DR, et al. MSSE 2004;36:79

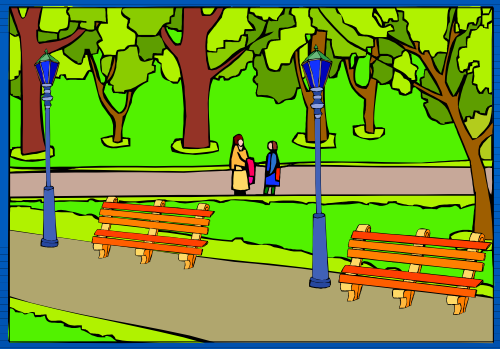
Lifestyle Activity: A New Paradigm in Exercise Prescription

The traditional model for getting people more physically active (i.e., a regimented exercise program) has been only marginally effective. Exercise professionals should consider broadening their client's recommendations, from the traditional frequency, intensity, duration, and modes of training that are associated with structured exercise programs, to promoting increased activity in daily living.

Health & Fitness Club (Rehab Facility)

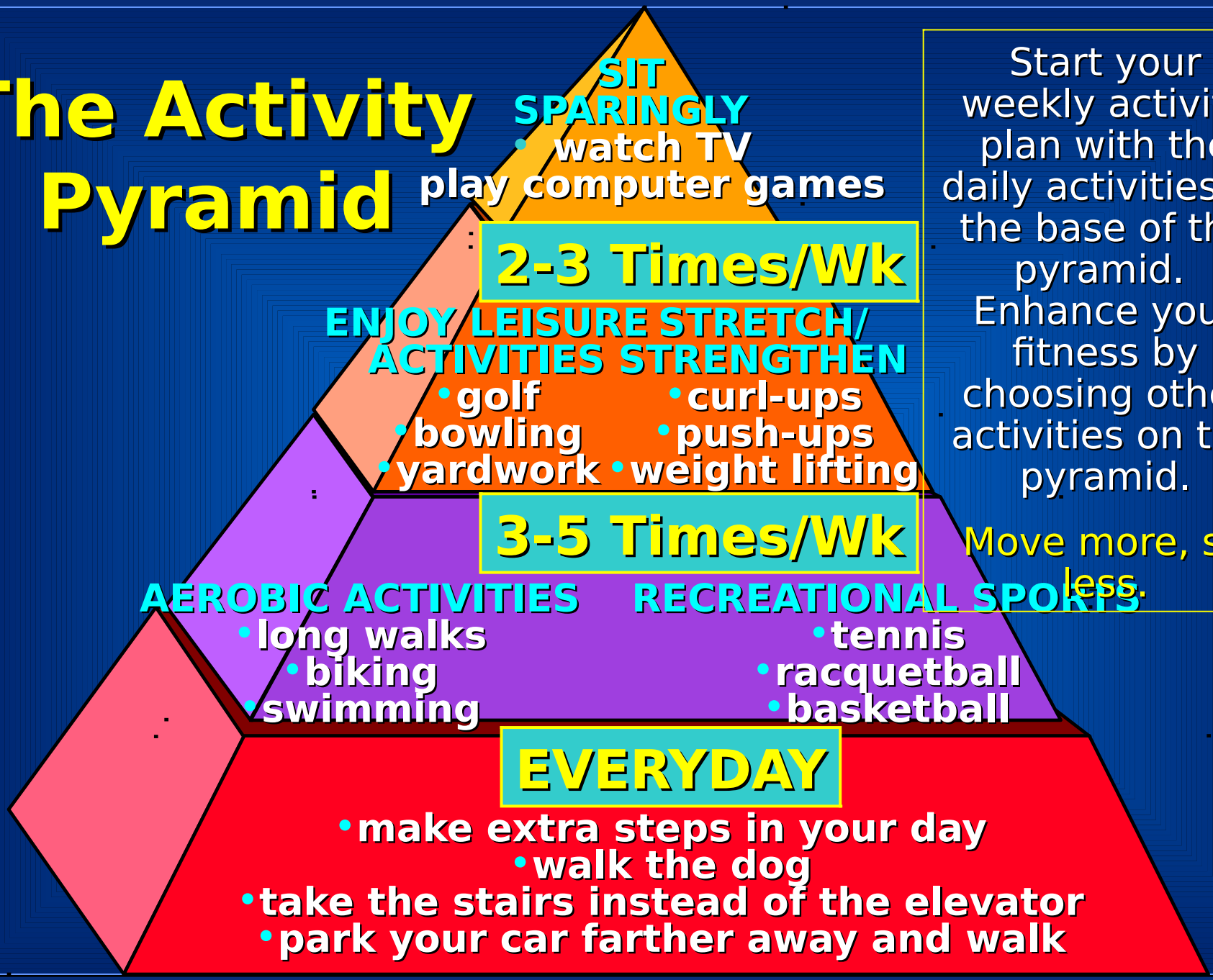
Exercise Time: 32-37 minute





20-25 minutes each w

The Activity Pyramid



Start your weekly activity plan with the daily activities at the base of the pyramid. Enhance your fitness by choosing other activities on the pyramid.

Move more, sit less.

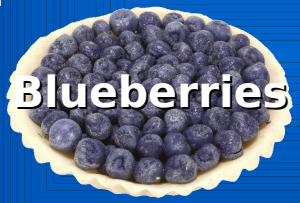
Accumulating 10,000 Steps Per Day

Pedometers can be helpful in promoting increased activity in daily living, by progressively increasing daily step totals. Accumulating ≥ 10,000 steps / day (the equivalent of walking roughly 5 miles) may improve health, fitness, or both, and meet or exceed current physical activity guidelines.

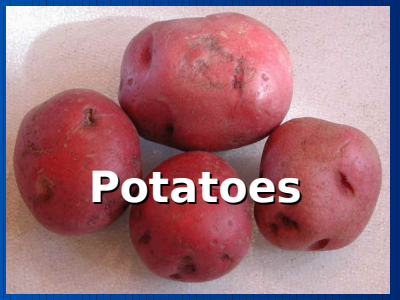
Good Nutrition

is a Choice

10 Good Foods*



4 Bad Foods*

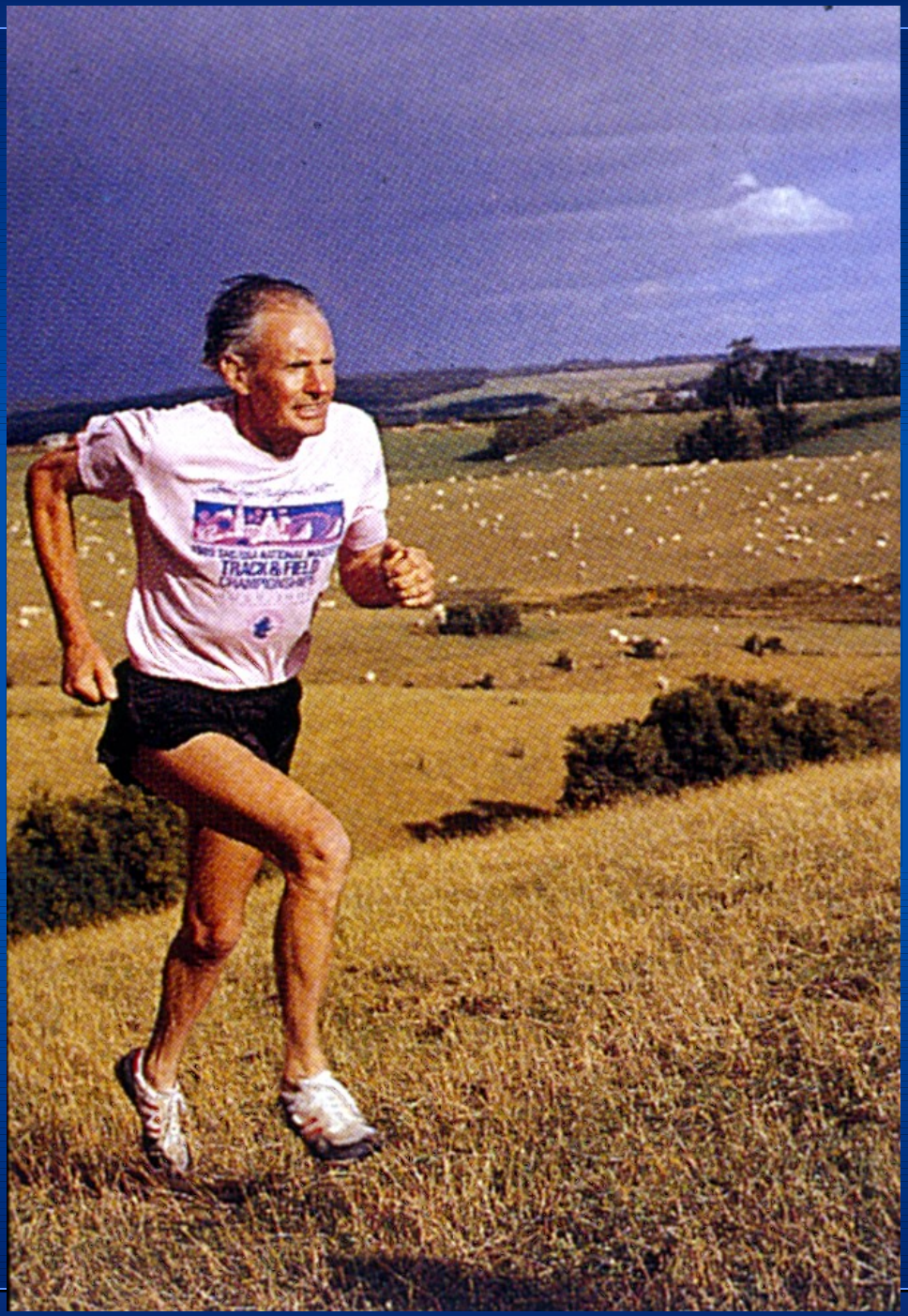


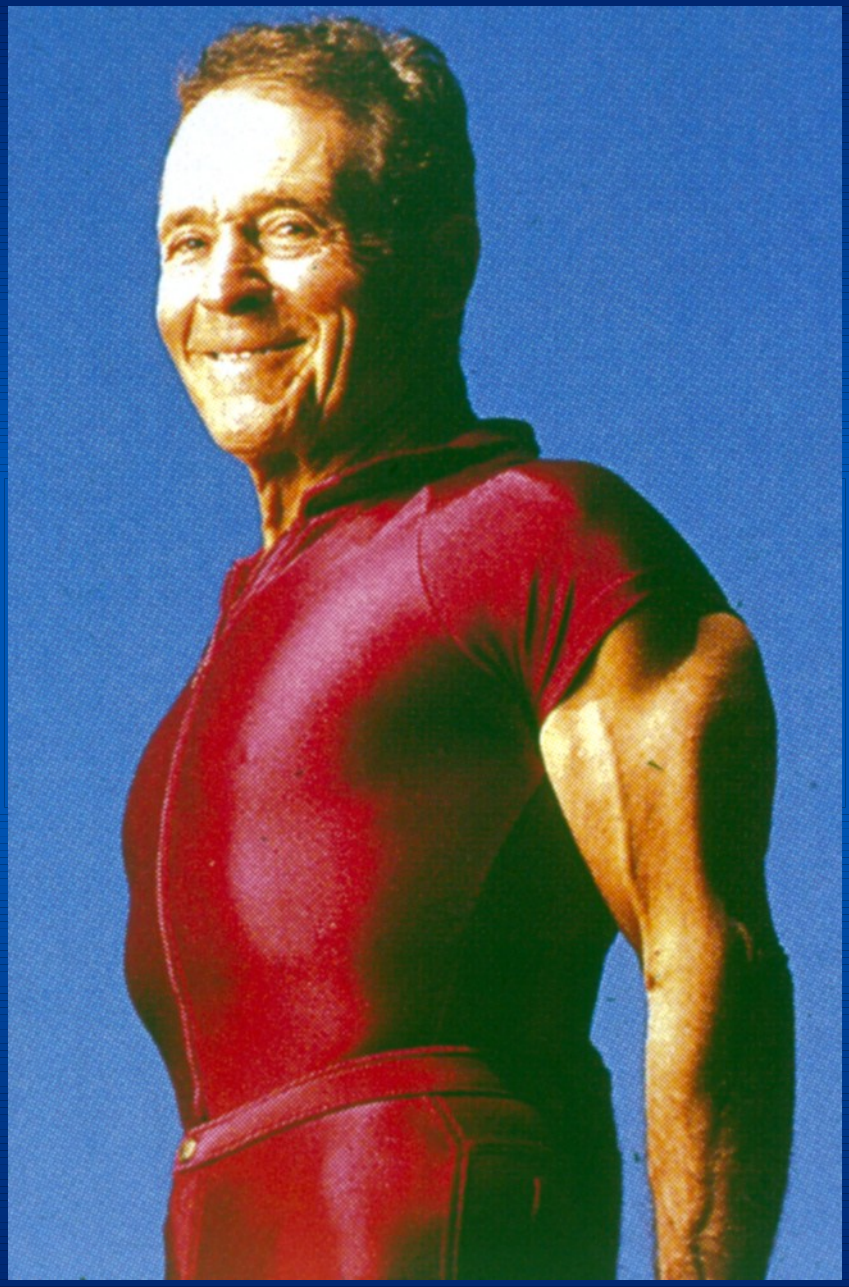
*Horowitz JM. 10 foods that pack a wallop. Time Magazine Jan 21, 20

Basic American Diet is Sweet, Salty, and Full of Fat

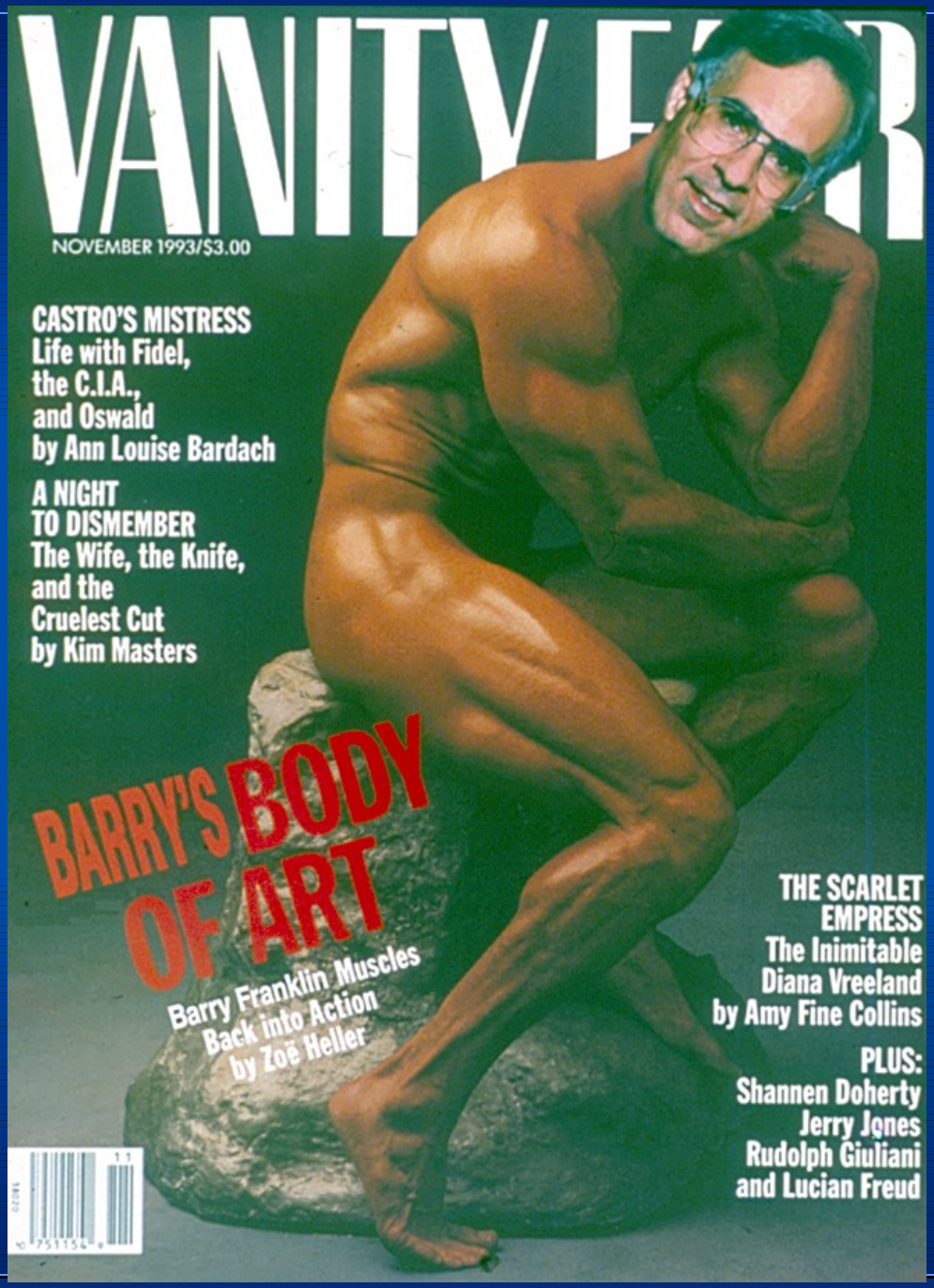
- Keys to Healthy Eating
  - ↑ Omega-3 fatty acids (salmon)
  - ↑ Rough up your diet (↑ fiber)
  - ↑ Fruits and vegetables
  - Drink water
  - Get an oil change (monounsaturated fats, olive oil, canola)
  - Avoid stick margarine
  - ↑ Consumption of beans and nuts
  - Dress salads lightly
  - Be picky about poultry
  - Hide the sugar bowl and salt shaker
  - Figure out “fast food”

Success Stories

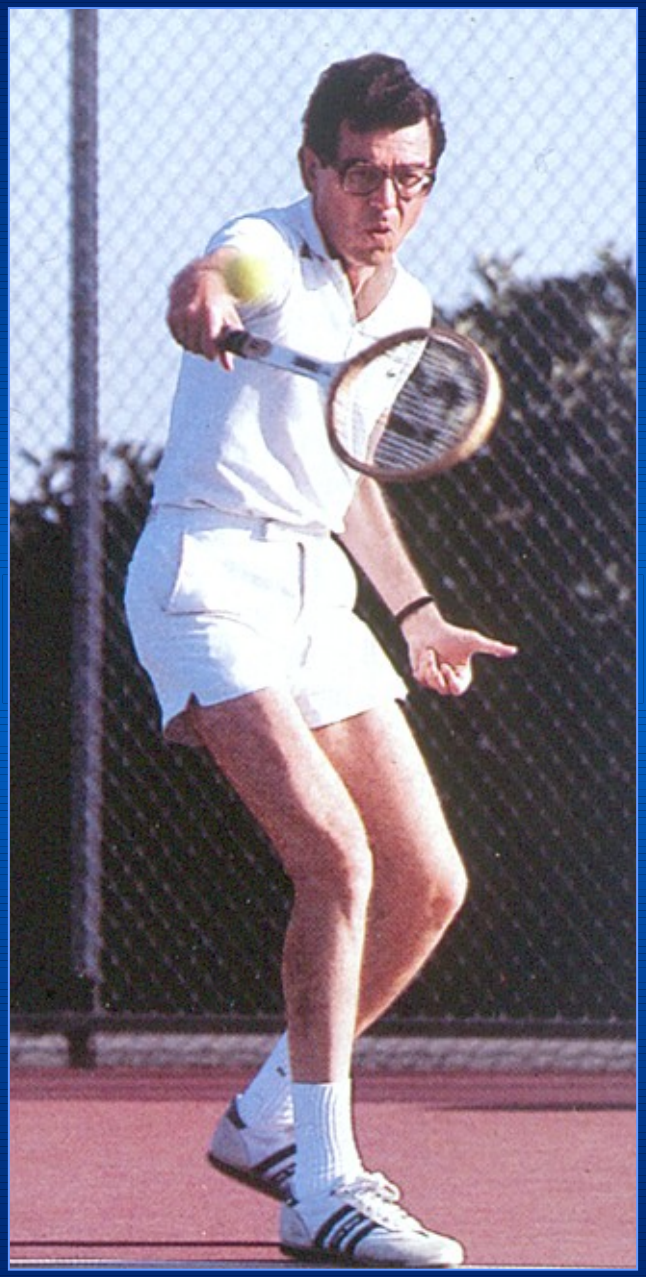

TRACK & FIELD



BEFORE
AFTER


VANITY FAIR
NOVEMBER 1993/$3.00
CASTRO'S MISTRESS
Life with Fidel,
the C.I.A.,
and Oswald
by Ann Louise Bardach
A NIGHT
TO DISMEMBER
The Wife, the Knife,
and the
Cruelest Cut
by Kim Masters
BARRY'S BODY OF ART
Barry Franklin Muscles
Back into Action
by Zoë Heller
THE SCARLET
EMPRESS
The Inimitable
Diana Vreeland
by Amy Fine Collins
PLUS:
Shannen Doherty
Jerry Jones
Rudolph Giuliani
and Lucian Freud

Fraudulent Gadgets, Gimmicks and Unfounded Claims



Thickness of Subcutaneous Fat and Activity of Underlying Muscles*

There was a mean difference in circumference of 2.25 and 1.15 cm between hypertrophied and less active forearms of male and female tennis players, respectively. However, the greater amount of exercise in the playing arm of tennis players was not accompanied by diminished fat deposits over that arm.

IMPLICATIONS

Spot Reduction

**Gwinup G et al. Ann Intern Med 1971;74*

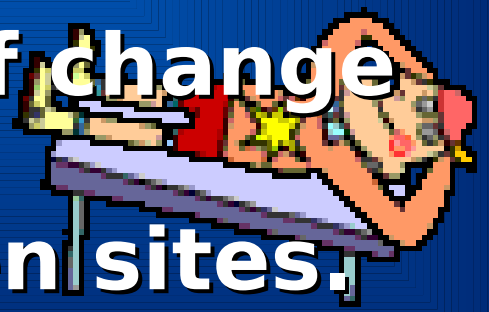
Effects of Sit-Up Exercise Training on Adipose Cell Size and Adiposity*

This study examined the effects of a 27-day sit-up exercise training program on adipose cell size and adiposity. Fat biopsies were taken from the abdomen, subscapular, and gluteal sites by needle aspiration in 19 subjects:

(13 experimental, 6 controls; $\bar{x}$ ± SD age = 19.4 ± 2.3 yrs; $\bar{x}$ ± SD weight = 76.1 ± 7.3 kg) before and after a 5 day/wk progressive training regimen. The total number of sit-ups done was 5,004.

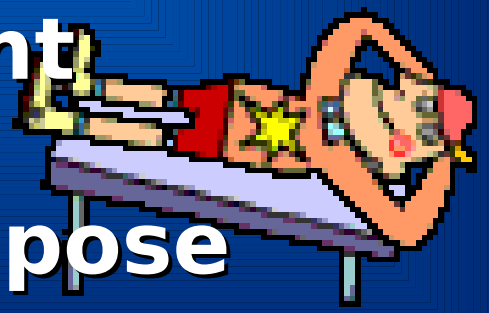
**Katch FI et al. Research Quarterly 1984;55:242*

Although there were significant decreases in cell diameter resulting from the sit-up program, there were no differences in the rate of change for cell diameter between sites.



**Katch FI et al. Research Quarterly 1984;55:242*

The conventional sit-up exercise does not preferentially reduce adipose cell size or subcutaneous fat thickness in the abdominal region to a greater extent compared with other adipose sites.



**Katch FI et al. Research Quarterly 1984;55:242*

EUROPE'S MIRACLE BODY SHAPER 'FIGURE-TRON II'

For Those Vital Figure-Toning Wonders of:

3,000 SIT-UPS WITHOUT MOVING AN INCH...

Tiny micro-electro impulses tone your muscles 500 TIMES A MINUTE!

...10 MILES OF JOGGING LYING FLAT ON YOUR BACK

Amazing NO-WORK Exerciser Tones Vital Support Muscles With Micro-Electro Sensor-Impulses and problem areas HUNDREDS OF TIMES A MINUTE! Automatically works on Slack, Flabby Muscles IN JUST 15 MINUTES A DAY!

ALL YOU DO IS LIE THERE—AMAZING 'FIGURE-TRON II' TONES YOUR BODY'S "SAG SPOTS"—IT'S LIKE HOURS OF EXERCISE IN JUST A FEW MINUTES TIME!

Think of it! Until recently, only available in America's most expensive weight-loss clinics and reducing salons, at $20 per session (and well worth every penny). NOW the home-size version of FIGURE-TRON II is finally here! By far the most exciting new breakthrough in the world of NO-WORK, figure toning beauty—truly the ULTIMATE DREAM-IN-VENTION for every man and woman who hates to exercise, but loves to look good! Yours to literally "dial in" the figure of your dreams... costs but 5¢ a week to operate... and with no more work than the flick of a switch!

TURNS YOUR BED INTO A FABULOUS FIGURE-FIRMING SALON!

Developed in Europe for use in reducing-clinics and weight-loss spas where, each week 'FIGURE-TRON II' tones thousands of cover-girl figures. Simply does wonders to keep their perfectly proportioned bodies you've always marveled at—with sleek, contoured thighs, cute, firm derrieres... a bikini-flat tummy and a waistline so trim you can barely pinch a half inch of excess flesh between your two fingers. Yes, a TOTAL, FULL-FIGURE TONE-UP lying on your back... nothing more... for just 15 minutes a day!

Small wonder 'FIGURE-TRON II' has fast become the "must machine," that in just 15 minutes a day replaces countless hours of body-racking exercise—as it SPOT-TONES your entire figure... ALL, while you watch TV, read a book or simply "snooz" and relax!

WORKS ON YOUR FIGURE'S SUPPORT MUSCLES AT WAIST, TUMMY, BUST, THIGHS, ETC.—SO YOU LOOK FITTER, SLEEKER, SEXIER, STARTING IN JUST 3 TO 5 DAYS!

All you do is place 'FIGURE-TRON II's' amazing electro-pulse-pads on any bulging problem area, (slack, flabby muscles at waist, hips, lower abdomen, legs, etc.)... set it to any one of 3 different levels of exercise-intensity you desire... (from easy warm-ups to all-out high speed muscle flexing and toning that equals 3,000 sit-ups WITHOUT MOVING AN INCH... 10 MILES OF JOGGING LYING FLAT ON YOUR BACK!) as you literally dial in a more youthful-looking, more beautiful body! The only sensation you feel is a thousand tiny tingles, as 'FIGURE-TRON II's' electro-impulses tone and flex your muscles... automatically contract and relax them... ALL PROBLEM AREAS OVER 500 TIMES A MINUTE! Gives you the same tone-up results as if you did daily sit-ups... leg raises... bend overs... or even MILES OF RUNNING A DAY!

WHY PAY $15 TO $20 PER ½-HOUR SESSION AT A FIGURE SALON, HEALTH SPA OR GYM? NOW ENJOY THE SAME FIGURE-WONDERS AT A COST TO OPERATE OF ABOUT 5¢ A WEEK!

Yes, thanks to modern technology, 'FIGURE-TRON II' is finally available in a precision-engineered, home-size unit... yours to try on a full NO RISK TRIAL BASIS in the privacy and comfort of your own home, for about the same modest cost as a good electric hair dryer or set of electric curlers.

And when you stop and think of the wonders it can do for your figure in JUST 15 MINUTES A DAY... it's really not a question of can you afford it, but can your pride, your personal happiness and good looks really afford to be without it! Especially when you can try it for a full two weeks... thrill to all the tone-up benefits of 14 consecutive in-home treatments... then let your own mirror and the admiring glances of your loved ones prove to you how truly effective is the miracle body-machine from Europe... 'FIGURE-TRON II'!

Because, remember... you must be fully thrilled with each new toned-up inch on every part of your body... or 'FIGURE-TRON II' costs you nothing... you have tried it entirely at our risk. Could anything possibly be fairer? ACT NOW!

Whacking the Fat Out of the Body

PRODUCTS: Fat Trappers, Fat Busters, Fat Wha

INGREDIENTS: Zinc, St. John's Wort, Synephrine, Chromium, and Chitosan (fat absorber)

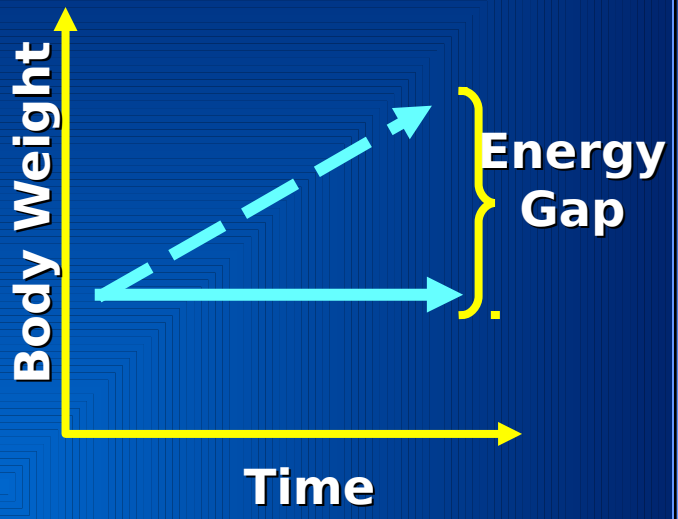
RESEARCH: 15 studies → ingredients don't work

ADVERSE EFFECTS: Vitamin deficiencies (A, D, E, K); Contraindicated in people with CAD, diabetes, HTN

Conclusions

The 100-Calorie Target: The Energy Gap

The median weight gain in the adult U.S. population is ~ 1.8 pounds/year. This represents a positive energy imbalance of only 15 calories per day over the course of a year. At the 90th percentile, the imbalance is only 50 calories per day. Thus, preventing weight gain in 90% of the population would take a daily increase in energy expenditure of only 100 calories or a decrease in intake of 100 calories or some combination.



America on the move
Steps to a Healthier Way of Life

Hill Jo et al. Science 2003;299:8

UNCORRECTED PROOF

American Heart Association®

Learn and Live℠

The No-Fad Diet

A Personal Plan for Healthy Weight Loss

Think Smart
Change your mind-set, change your body

Eat Well
Choose from three eating strategies and more than 190 recipes

Move More
Ease into an active lifestyle

Take Home Messages

- Environmental influences provide the most likely explanation for the current obesity epidemic (i.e. "the perfect storm").
- Aerobic fitness is inversely related to mortality. Moreover, fitness decreases the mortality risk in normal weight , overweight , and obese individuals.
- Environmental changes, sensible caloric restriction, increased physical activity, drug therapy and surgery are the preferred treatment options.

Take Home Messages

- Overweight people have demonstrated a growing “appetite” for quick-fix weight loss products – few of which are legitimate and many of which may be dangerous.
- The AHA is uniquely positioned to address the causes and consequences of obesity.

American Heart Association's Alliance for a Healthier Generation

- Leading food manufacturers (Campbell Soup, Dannon, Kraft, Mars, Pepsi Co.) → development of healthy snacks and food items sold in schools.

- Availability of unsweetened juice, low and no-fat milk, and bottled water in schools.

- Physical education and wellness programs for all students – not just athletes.

The Ultimate Weight Loss Exercise?